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Issue 98 • 22 September 1990 • 70p

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THIS WEEK

AMIGA
Beta Unlimited's unbeatable 16-bit sound sampler – a cut above the competition
Plus Professional Page price cuts – layout for less outlay!

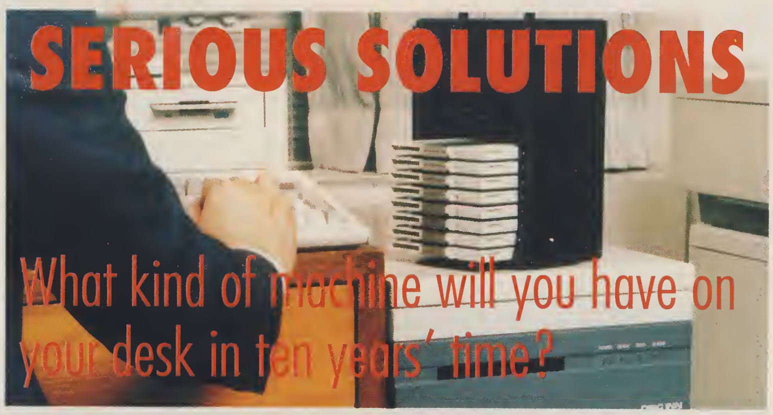
POWER PCs
CompuAdd announces an exciting new range spanning both lighweight laptops and power platforms
Plus The solution to configuration problems

ARCHIMEDES
Do the latest shoot-'em-ups come up to scratch?

ST CONSOLE SENSATION

EXCLUSIVE!

Atari's all set to pounce with its Panther mega-console. Express lets the cat out of the bag on page 7...



SERIOUS SOLUTIONS

What kind of machine will you have on your desk in ten years' time?

AMIGA MEGA MIXERS

Express spins the disks of three budget Amiga sequencers on page 65

PLUS 36 PAGES OF BARGAINS

IN THE CONSOLE ZONE: POPULOUS REVIEWED

SHOPPING EXPRESS

THE VALUE-PACKED GUIDE TO YOUR MACHINE AND MORE

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IRON LORD ON THE CPC

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Looking for the perfect PC?

Amstrad's new generation on test

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frontend

edited by Colin Campbell

• *Take a trip with Douglas Adams and Tom Baker through the reals of cyberspace. And this on the BBC!*

Boot up your television

Any self-respecting multimedia kind of guy knows that television is definitely a no-go area for a fully-interactive cyber time. But the dear, dear old thing does have its uses.

Take this Friday's screening of *Hyperland*. It's a 50 minute journey through the an interactive television network of the future. Techie guru Douglas Adams and former Dr Who Tom Baker act as guides.

The semi-documentary is hung on a loose plot; Adams is sick and tired of the telly and does the decent thing by chucking it out. Baker the 'software agent' steps in and leads our man through a bizarre electronic landscape in which TV viewers need no longer cabbage in front of the screen. Instead they can actively determine the direction of their viewing by clicking on moving icons.

It's chock-a-block with some decent computer animations, intriguing concepts and even experimental prototypes. It's on Friday September 21 from 9.30 to 10.20 on BBC 2.

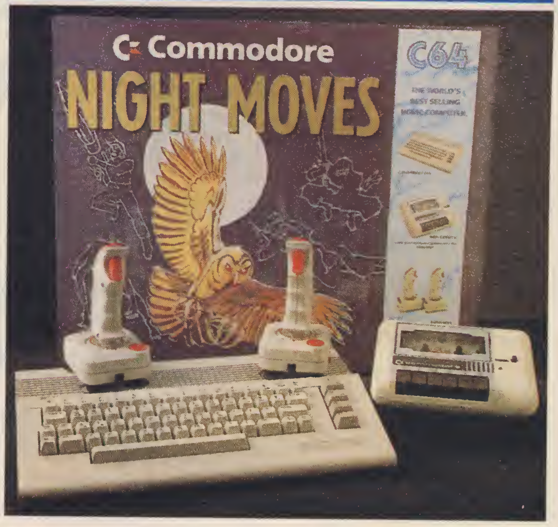
Frontend says: check it out. ■

Hacker 'afraid to go outside'

Zod, the 14-year old hacker who caused untold damage to a Washington university's computer system, is in the news again.

The high school kid has stolen $1.2 million worth of games and source code from Bellevue University's computer system, and he's facing some serious prosecution for the stunt (you don't mess with AT&T).

Now his father has spoken of the boy's unenviable lifestyle. "Why does he sit in front of a computer screen for 10 hours a day? He can't go outside, he's afraid to go outside without me. His only means of communicating is over the telephone and over the computer. Kids need to communicate." ■



It just won't lie down

Commodore has unveiled yet another special pack for its old-timer the C64. The new bundle, called Night Moves, includes four new Ocean games – **Sly Spy, Midnight Resistance, Shadow Warriors** *and* **Night Breed**. *There's also the family favourite* **Trivial Pursuit** *as well as* **Split Personalities, Confuzion** *and* **Snare**. *With two joysticks the whole thing costs £159.*

Commodore is keen to continue promoting the C64 computer despite the presence of a £99 dedicated console based on the machine. "If you want a real computer with some educational capabilities then here's the C64," enthused a spokesman.

It remains to be seen how the C64 will do in a market rejuvenated by **Amstrad's CPC Plus range**. *Which would you rather have? Write in!* ■

Computers are good for you

A new report just published in the US has found that infants can handle computers long before they can read or write, and computers help them learn.

Sponsored by IBM and the US Government the report is the culmination of a two-year study aimed at under-privileged children in American cities.

It states: "The computer has increased the children's' ability to attend to task, co-operate with other children and teach each other. Also, social skills, such as waiting for turns, have been improved.

"Computers can create an unlimited range of conceptional environments for children who can then explore and construct their own understandings of the world." ■

Keeping track of the punters

There's nothing unusual about punters consulting computers for help on the turf. But when the bookie boots up there's got to be something afoot.

Ladbrokes has spent the past two years feeding data about punters into a mainframe at Southampton University. The aim is to find out how really good gamblers operate.

Some 100,000 betting slips have been analysed already, and Ladbrokes says it will be continuing the project.

The computer found that logic is the gambler's best friend after all. Punters who laid their bets just before the start of a race, and therefore had access to all relevant data, had a better chance of collecting some ill-gotten gains. Those who took early morning prices were less likely to be celebrating by the end of the day.

But why are the bookies telling us this? Johnnie Johnson, who is leading the computer operation said: "They like some people to win, otherwise no-one would bet."

You get the best tips in *Express*!

There's nothing to it

It's skinnier than Said Aouita and with a top speed of 16MHz is probably just as fast. This ultra-thin creature, the Dynabook 286 weighs in at just 5.3 pounds. It will be launched in London this week to the portability cognoscenti. Full details read *Express* next week. ■

- Tanzania's president **Ali Hassan Mwinyi** has warned that he will stop the import of computers deemed to be "unsuitable for the country". He said the country should determine a definite policy toward computer literacy and not waste money on "useless" technology. He added: "Tanzanians' capability to have a good command of computers will decide the country's future development."
- Indianapolis 500, the official game of the famous race, is to be launched on the **Amiga**. It's already out on the PC. Publisher is Electronic Arts, price is £24.99.
- The Poqet hand-held PC has been drafted into the **Gulf conflict**. A new version of the machine with a special rugged case is to be used by the infantry. But it won't be on any pen-pusher's desk. A spokesperson said soldiers will be using the machine "right up in the front lines". The actual application is classified.
- Top programming tool **GFA BASIC,** already a hit with Atari ST owners, is to be converted to the PC. The interpreter and compiler is generally considered to be the best version of BASIC around. GFA's technical whizz Les Player said: "It's got more features than the ST version." Price is £150. Call 0734 794941.

Everybody's going green

Q. What have Sean Connery, Errol Flynn, John Cleese and a talking fox got in common?

A. They've all played Robin Hood, the excellent and wily hero of Sherwood's leafy glades.

Q. What can this possibly have to do with home computers, which generally do not swing from trees, shout hurrah or humiliate fat parasites?

A. Simple. Thanks to a new computer game currently in development we'll all be able to join in the genial do-gooder's adventures. The publisher is the very worthy Virgin/Mastertronic and the Robin Hood game should be with us early next year. Virgin is keeping tight-lipped about the whole thing – but it has been in development for at least six months now and will probably be released on all major formats to co-incide with the premier of a brand new Sherwood flick. ■

Carry on Coupé

• Relaunch? SAM hope.

So, you thought the demise of MGT, manufacturer of the SAM Coupé, would stop this little machine from ever resurfacing? You thought MGT's humongous debts of £1.7 million would put paid to the Coupé's chances? Not so.

Last week the MGT escape pod, SAM Computers, relaunched the machine at a '£50 off' price point of £199. The machine only comes in its disk drive configuration and has been re-christened the Super Spectrum. SAM Computers is run by Alan Miles (who used to run MGT). In an effort to keep his beloved Coupé going Miles is buying stocks of the machine from MGT's official receiver. He has also been promoting the Coupé to software publishers. At CES last week the Super Spectrum came to, alongside three new Coupé games from Enigma Variations.

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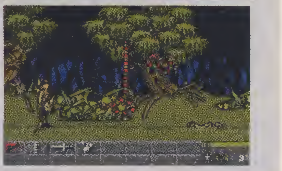

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The Computer Entertainment Show at Earls C

LONDON OVE

It was loud, brash, and not a little immature. Here we were for the first time – a computer show without the serious stuff. At the Computer Entertainment Show at Earls Court last week the only thing to do was play games, look at games, talk about games and maybe even buy a few. We had a blast.

Apart from blagging free goes on arcade machines, hogging consoles or standing bug-eyed before demos there had to be something new, something marvellous, to make the mad hustling worthwhile.

Officially there were loads of new machines launched. But for many it was like meeting well-loved pen-friends for the first time.

Most of us are familiar, nay intimate, with the likes of the Nintendo Gameboy, Sega Megadrive and Neo-Geo console. But despite all the reviews and stories this was the first time we could get our hands on the real items. Test driving a Neo-Geo is an altogether more exhilarating experience than reading even the most frenzied review.

So it was with the C64 and Amstrad CPC consoles. We all know what they are and understand what to expect. But it was good to put them through the paces.

OK, so there were no big surprises. Alright the Commodore CDTV 'launch' was nothing of the sort. But we had to have some fun. Software wise we were laughing.

Ocean: CES proved what many had feared. Oceanaphilia is well and truly with us. It's a condition which can strike anyone, the symptoms are simple. It's the conviction that this software publisher is beyond criticism, it's an absolute failure to find any fault with the Manchester software house.

Most sane people at CES were struck down upon walking onto the gargantuan Ocean stand. And why? Check out these games: *Nightbreed*, *Robocop 2*, *Total Recall*, *Special Criminal Investigation* (*Chase HQ 2*), *Billy the Kid*, the space extravaganza *Epic* and the brilliant anti-drugs kill-'em-all *Narc*. All these Christmas number one contenders were on display, and with Ocean's grandiose, confident presentation it was awfully hard to resist odious sycophancy.

Us Gold: Once again Gold came with a big stand with plenty to offer. The company has been busy picking up all-important licences. Heavy duty violence was the general theme and a jolly good theme it was. Look out for *Line of Fire* which is just like *Operation Wolf* but without the intellectual slant. And then there's *E-Swat*, another destroy the criminals caper and *Crime Wave* which, surprisingly enough, involves scumbag slaughter. More esoteric is *The Secret of Monkey Mountain* from Lucasfilm. Watch out for *UN Squadron* which involves blowing away arms dealers in the Middle East, and also slash-em-up *Strider II*.

JAMES BOND
007
ACTION PACK

• It wasn't all consoles and Amigas: the Speccy did get a look in.

Sega owners will be pleased to hear that *Indiana Jones and the Last Crusade*, *Paperboy*, *Gauntlet* and *Impossible Mission* are coming their way.

Hi-Tec Software was tucked away with some splendid licenses. Everyone is hoping the company does well with *Top Cat* and *Yogi Bear* – ready next month. But cartoon licenses do have a nasty habit of going wrong. (*Scooby Doo* and *Asterix* and were horrible disasters, although not for Hi-Tec.)

Virgin Mastertronic: This company has the Sega and isn't shy about it. The firm reckons there will be 1.5 million Sega owners in Europe by February. Software wise there's plenty. *Aerial Assault*, *Ultima IV*, *Golfamania*, *Double Hawk* were just a few on show.

And there was the wonderful 16-bit Sega which is here at last for those gamers who like their software '90s style. The grey importers have been flogging the machine for months amid largely unfounded talk of compatibility hitches. But now Virgin is getting serious about the machine and buyers can expect real support. New titles include *Michael Jackson's Moonwalker*, *Truxton* and *Ghouls 'n' Ghosts*. Enhanced versions of old classics such as *Shinobi* and *Super Hang-On* are also available.

• Take a spin in the Cruisemobile...

Nintendo: It would appear that the globe's largest computer entertainment company is finally making a real effort on this island. The stand was loud and well attended. Making its debut was the Nintendo Action Pack which includes the console, two joypads, a light gun as well as the ubiquitous *Super Mario Bros* and *Duck Hunt*.

Gameboy has also arrived. From here on in things will never be the same. Optimistic comparisons with the Sony Walkman are being made and a fair percentage of CES visitors were making mental notes on a possible future purchase. This thing is going places.

Psygnosis: A big stand for big games. *Awesome* will be a hit and *The Killing Game Show* sounds interesting. There's also a futuristic maze game called *Matrix Marauders* and *Shadow of the Beast* for the ST. And we still haven't mentioned Roman military game *Carthage* and high-speed driving with *Nitro*.

MicroProse: One of the most exciting announcements was, wait for it, an advanced version of mega-game *Elite*. *Elite Gold* is coming out on the PC and instead of the original wire frame graphics gamers are being treated to sold 3D space war. It'll be ready at the end of the year for £34.99.

There was also *Rick Dangerous 2*, 3D shoot-'em-up *Simulcra*, *Starlord*, *International Soccer Challenge*, *Covert Action* and sub game *Silent Service 2*.

Entertainment International: The newly launched Disney label is soon to be releasing *Dick Tracy* and *Duck Tales* as well as a number of toonish art and educational packs. EI is responsible for the Empire and Titus labels. The former will be bringing us *The Amazing Spiderman* and *Paul Gascoigne's New Soccer Game*. From the latter comes *Fire and Forget II* and *Crime Does Not Pay*.

Infogrames: This lot is from France and its software is mucho strange. *Bandit Kings of Ancient China* features a cast of 225 characters and is very bloody. *Alcatraz* is another 'wipe out the drug barons' affair while the *Light Corridor* is an intriguing *Welltris* like puzzler.

• "Those without tickets join the queue to the right; you have 30 seconds to comply."

• This is what happens if you play too many video games

Watch out for *Alpha Waves* which, somewhat absurdly, is described as "the marriage of the spirit and technology". It's all very new age and is about the management of an item in a cube of space. I told you they were strange.

Electronic Arts: The Americans decided on a low profile and were restricted to a hospitality suite. Therein you could have seen the unspeakably brilliant *Powermonger* – which is the follow up to *Populous*. There was also *Magic Fly* which is all about wasting space-age baddies, and a fantasy affair called The Immortal. Other interesting morsels included *Bards Tale III* for the PC and Amiga, and *Battle Chess II: Chinese Chess*. Tolkein classic *Lord of the Rings* is also coming to the PC.

Accolade: Lots of goodies to come from Accolade. Try your hand at the trifling matter of galactic conquest in *Star Control*. Scour the jungle rivers of 'Nam in *Gunboat*, get cyber in *Altered Destiny*. There's also a game based on *I-Ching* called *Ishido* and *Search For the King* which you probably already know about.

Mindscape: This month sees the launch of Tom Cruise's speed freaking game *Days of Thunder*, which looks OK. We've also got fantasy with *Ultima V* on the Amiga and "true stereoscopic 3D" with *Beyond the Black Hole* which utilises those funny glasses they used to give you at 3D flicks.

Ten for the CPC console

The hardware was launched officially, but we know all about that already. Amstrad let everybody have a go on the new machine and announced an encouraging number of cartridges. They include: *Batman, Switchblade, Klax, Fire and Forget II, Crazy Cars 2, TinTin on the Moon, Tennis Cup, Batman 2, Robocop 2* and *No Exit*.

Court last weekend showcased all that's best – and worst – about games

ERRUN BY MONSTERS!

ommodore
Commodore
SCREEN GEMS

• Commodore's huge stand was said to have cost hundreds of thousands of pounds.

Domark: Buckle up for *Hard Drivin' II* which is going to be a real bitch even for the meanest driving fans. That'll be ready for Christmas. Tengen coin-op conversions in evidence included high seas piracy yarn *Skull and Crossbones* and Hydracraft baddie-basher *Hydra*. There's yet another 'Nam game called *'Nam 1965-1975*. This one doesn't involve wiping out the VC single-handed, it's a clever strategy game. The firm is also releasing *3D Construction Kit* from Incentive which lets you play around with Freescape.

Elite: *Gremlins 2* is sure to be buzzing around in the charts for a good while. But there are also conversions of Sega's *World Championship Soccer* and *Tournament Golf*.

Mirrorsoft: Those bloody turtles have arrived. On the Mirrorsoft stand you could have witnessed several grown men dressed in half-shell suits prancing around to *Turtle Power*. The game is out soon and will be a massive hit. Mirrorsoft also has *Predator II* and *Back to the Future III* which is the one about cowboys. On the cutesy front there's the endearingly titled *Flip-It* and *Magnose*. Keep an eye out for *Speedball II*. The original is going to be released on the Sega, as is *Xenon II*.

Gremlin: Speccy and CPC owners will be treated to the Psygnosis 16-bit classic *Shadow of the Beast* later this year. Gremlin reckons it has managed to retain the cutting edge of the original. The firm is well into driving games at the moment. Check out *Super Cars*, *Lotus Esprit Turbo Challenge* and the forthcoming *Celica GT4 Rally*. There's also motorbike title *Team Suzuki* and a compilation of 10 games for the 8-bits. CES 1990 was probably Gremlin's biggest presence at a computer show and the stand was always full of visitors.

Electronic Zoo: Did you know that the England players took several sets of Subbuteo with them to help unwind during the Italia '90 campaign? Now you can do the same on your home micro. The computer version is out any time now on most major formats.

UbiSoft: More weirdness from France, but it looks like good stuff. *Ranx* and *Back to the Gold Age* are graphical wonders while *Tom and the Ghost* is a lot of fun. Other goodies include *Brain Blasters*, *Jupiter Masterdrive*, *Magic Land* and puzzler *Pick'n'Pile*.

Audiogenic: Its major game is a shape manipulation affair called *Loopz*. It must be good because coin-op manufacturer Capcom wants to put it in arcade machines. *Loopz* is out on all formats, real soon.

CDS: Sports fans will be getting a dose of *European Superleague* this autumn. It gives you the chance to manage a proper football club like AC Milan or Bayern Munich in a continental battle for Euro supremacy

Sierra Online: *Fire Hawk*, *Hero's Quest I*, *Keeping Up with Jones*, *King's Quest I*, *King's Quest V* (?) and *Mixed Up Mother Goose* (??). They're all new and they're on their way.

Reported by Colin Campbell.

• *Three, er, celebrities open the show.*

Check out the CDTV

Commodore didn't manage to launch its interactive CD Amiga. Instead, the firm explained how it would be handling the launch when everything is ready.

The plan is to organise a nationwide public beta-test wherein various home users, corporate customers and schools will be able to buy the machine for a £200 off the price-point of £499. They would then be required to let Commodore know when things go wrong and make constructive observations. CBM UK boss Steve Franklin said: "The CDTV is so important to us. We have to get it right. We'll make sure it's properly tested before we launch properly."

Test versions will be going out just before Christmas with a proper launch in February.

NEXT WEEK: We'll be offering you the chance to be a CDTV beta tester. Be there.

Six state of the art PCs from Compuadd

• Compuadd: state of the art.

CompuAdd has unleashed a six-pronged attack on the UK business computer market. Last week the company announced that it was releasing a 286 notebook, 386SX laptop, 386SX PC, a 386 tower, and 386 desktop system, and 486 low-profile PC.

Interestingly, The Companion notebook computer is the Sharp PC6220 notebook with a new name. Not only that but CompuAdd's version is to sell more cheaply than the original. The price difference is some £646 with the CompuAdd version selling at £1,999 against Sharp's £2,645.

Both the laptop, called the 316SL, and the 386SX-based PC, called the 320S will be bundled with Windows 3.

The tower based system, 333T and its desktop companion, the 333, are both 33MHz, 386 machines and both come with three 'hot-slot' expansion ports designed to take CompuAdd's option cards. This has been seen as a way of getting around the cost of using EISA 32-bit architecture.

The 486-based 425, so named because it runs a 486 processor at 25MHz, is a compact system which comes with three expansion slots for 8- and 16-bit expansion. It comes with 4Mb of on-board RAM, an 80Mb hard drive and a choice of drive sizes. You also get a VGA colour monitor.

Prices are as follows: The Companion is £1,999, the 316SL laptop is £2,299, the 386SX starts at £1,449, the 333 desktop is £3,049, its tower system counterpart the 333T is £3,299, and the 425 costs £4,649.

For more call CompuAdd on 0272 254789. ■

Atari confirms rumours of ST co

THE PANT

CONSOLE

A new ST-based games machine will be launched by Atari later this year, *Express* can reveal.

Called the Atari Panther it will be pitched as a top-of-the-range games console rivaling the Sega Megadrive and even the highly impressive Neo-Geo. The machine will be shown for the first time at the Las Vegas Consumer Electronics Show this November. Full UK distribution has been pencilled in for next summer.

The Panther will incorporate ST technology, but will be cartridge based. However, Atari is working on an adapter which will allow 3.5-inch drives to be connected to the machine, and switchable video modes to run available disk-based ST software.

A price tag of £199 has been decided upon but that is entirely provisional. The idea is to produce a mass-market console which will be as good as Nintendo's Famicom, the Megadrive and Neo-Geo but at a more desirable price.

US sources believe the Panther to be based on a 68000 chip with a speed of 12MHz, running 4,096 colours on screen from a palette of 16 million. Like Atari's hand-held Lynx the machine is likely to feature four 8-bit sound channels.

A spokesman for Atari confirmed that a console is under

Chip chaps chill out!

A Californian company has found a way of doubling the speed of a 486 chip. Velox Computer Technology has clocked a chip at a stunning 50MHz – the 486 will usually trot home at 25 or 33MHz.

The technicians managed this feat by building the chip inside a miniature freezer, thus stopping the wee marvel from sizzling away into nothingness.

This is no idle experiment. Some 40 PC manufacturers are reported to be working on prototype machines utilising this technology. As well as preventing overheating, chips can actually work faster at low temperatures.

- Meanwhile, scientists in the US believe they have found an alternative substance for the manufacture of computer chips.

Called Polymeric Paper, it could eventually replace silicon in computer chips. If so, developers would be able to eliminate the painstaking tricks currently used to construct chips.

The Californian scientists made the discovery while searching for a plastic coating for normal chips. They found the plastic based substance could make a better semiconductor then silicon. Various chip manufacturers and hardware companies are said to be interested. ■

Don't panic! Hitch-hiking is cheap

Old-time Infocom adventure classics are to be re-released as budget games by Mastertronic.

Five titles will be released starting from the end of October. They will be available on the ST, Amiga and PC for £9.99.

The low-cost game titles include *Zork 1* (one of the best selling adventure games ever), *Hitch-hikers Guide to the Galaxy* (still a classic after all this time) and *Leather Goddesses of Phobos* (very naughty). *Planet 4* and *Wishbringer* are also on the list.

Meanwhile, umbrella company Virgin Mastertronic has had a corporate brainwave and split into two operations.

The bit which interests us will be Virgin Games – which will publish Virgin and Mastertronic games as well as handling the Sega console. The boring bit is still called Virgin Mastertronic. That will now sort out the company's marketing, distribution and sales. ■

• Fans of that siliconised lounge lizard Leisure Suit Larry are to be treated to a book detailing all there is to know about California's most desperate lover. The Larry Story from Abacus includes loads of tips to help you get the girls in Sierra On-Line's adult adventures. There's also a thorough run-down on Larry's buzzing personality (three lines). ■

Protect and surprise

Yet more PC protection has arrived, in the form of Alarm Card Professional.

It is claimed that the card protects against unauthorised access to your PC. In the event that an outsider tries to have it away on their toes with your PC, the card lets out a high-pitched screech which can last for up to 12 hours.

The card costs £261. For more call Arcaid Computer Systems on 0628 826564.

Elsewhere on the PC protection front, the *Anti-Virus Toolkit* is to be updated and re-released.

The software is claimed to be able to detect over 170 different viruses. Price is £59. For the truly paranoid there is a £279 package including faxed news of computer diseases. For more call S&S on 0494 791900. ■

Make a million with CD-I

Philips reckons anyone with a smart idea can make a million with a clever application for the forthcoming CD-I machine.

On sale this week are the first development kits for the system which goes on release next year. Philips has thrown open the doors to every and any company which wants to make its mark on the multimedia revolution.

The kit allows developers to mix video, stills, graphics, text and voice overs. So if you think there's a demand for *The Complete Guide to British Worms* or *Accrington Stanley – an Interactive History*, start saving. The kit costs £12,750 which includes studio and support services as well as a maintenance agreement. Call 0306 75777. ■

In at the DTP end

Finesse, the highly rated PC desktop publishing package, has been upgraded to version 3.1.

Newly incorporated into the package is a clip art library. Another new option is 'layout control' which allows the user to preview pages and double page spreads before printing. A hairline pointer, allowing more precise mouse control, and a spell checker have both been added.

It costs £171. For more information call Logitech on 0753 37222. ■

compatible ‘super console’ set for spring 1991 launch

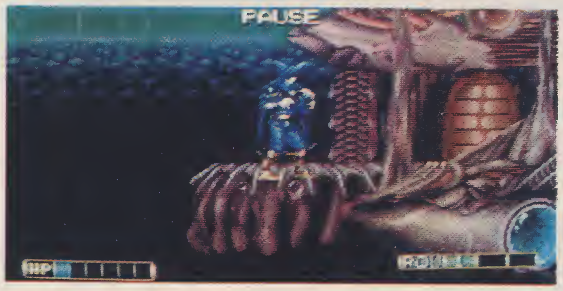
THER – ATARI’S ST REVEALED

EXPRESS EXCLUSIVE

development but refused to be drawn further, saying that no details will be released until everything is absolutely ready. “In this fast moving industry leading developers can’t afford to stand still. There will be announcements at CES in Las Vegas but I’m not in a position to comment a present,” he said.

Leading software publishers are expected to receive development machines in the next few weeks – Atari wants to establish a sound base of popular games while encouraging Panther versions of new blockbuster titles.

New titles will cost gamers about £20 each, but there could well be a proliferation of ‘four games on a cartridge’ packages which will also cost about £20 each.



• Neo-Geo: Atari will launch a machine with a similar specification, but at a better price.

Atari is in a more optimistic mood than it has been for the past two years. It has recently offloaded the loss making American retail chain Federated which the company had bought in 1988. That disastrous decision had caused delays on last year’s big launches the STE and TT. Now though the company can concentrate on the activities for which it was originally formed – video games.

Atari was poised to launch an ST-based console two years ago (*Express* 1) but had frozen the plans because resources were needed for the Lynx hand-held. Now Atari knows it cannot afford to be left out of the games console arena, especially given that great rivals Commodore and Amstrad have recently committed themselves with the C64 GS and CPC GX4000. ■

Atari’s cut and thrust

Atari has ordered price cuts of up to £300 on its range of PCs.

The bottom-end PC-3 without monitor has been reduced from £699 to £499 – that comes with a 10Mb hard disk. The 12MHz PC-4 286 with 60Mb drive now costs £999 – down from £1,299.

And the year-old ABC 286 with 60Mb hard drive is down from £1,399 to £1,099. Monitor options are £100 for mono rising to £300 for VGA colour.

Another ST?

Rumours are surfacing of a new mid-range ST understood to be codenamed Jaguar. It will be positioned between the ST and TT and will be pitched at the low-end DTP and business markets.

Sources suggest the machine will make an appearance next spring with a price tag of about £750.

More details in *Express* as they emerge.

Hackers fail to beat US firm

US firm LeeMah DataCom Security was getting pretty ticked off with hearing about how smart all these hackers are getting. So it decided to challenge America’s finest to a duel; its security system against their skills.

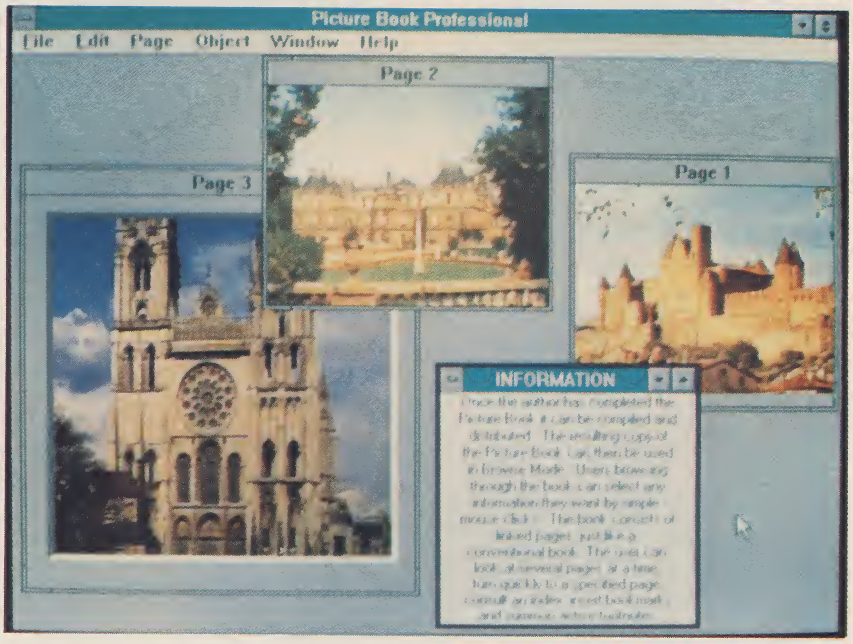
The challenge ended last week with 2,009 hackers attempting to break into the company’s system, based in offices in New York and California. Not one succeeded.

President John Tuomy commented: “The contest had only one purpose; to demonstrate that companies can simply and effectively stop hackers themselves.”

Hackers attempting a break-in found three security levels. It is estimated that the chances of breaking all three codes are 72 quadrillion to one. The hackers had been told to find a secret message at the core of the system. It read: “The persistent hunter who finds his prize sooner or later becomes the hunted.”

CONSOLE YOURSELF
on page 48

MIX THE PIX



Intelligent multimedia systems are one of the futures for computing, and a new product called *Picture Book Professional* (above) aims at making it a feature of the present.

The system is said to allow the user to store video, still images, graphics and text on their PC on a freeform basis. The expert system which is the core of the program does the structuring for you.

Picture Book Professional is a Windows 3 based system which makes use of a ‘multimedia’ card, using Inmos-built transputer technology. It will allow live images to be inserted into into a 640 x 480 colour VGA system.

Two software options are also available in the form of Authoring and Browse modes. The first allows the user to create ‘pages’ into which windows are created containing live or static images as well as text. Each of these can then linked to other pages.

The second mode allows the user to select information from the made up *Picture Book* pages. Selection is carried out with the mouse, and because links can be made browsing can be made over a number of them.

Picture Book Professional is priced at £1,719. For more information call 0763 242955.

NIBBLES

- To the **Atari 8-bit,** a new product. The Controller Card PBII allows the Atari XL and XE computers to use two operating systems. One is the standard while the other is programmable. The card is an internal hardware fixture. From the same company, Gralin International, comes *Toolkit Set*, a set of utilities enabling you to dump the screen to printer, memory to disk, and the ability to change to character set, among other things. If this isn’t enough there is also the OS Switch Pack which allows you to toggle BASIC on and off, and switch between Atari OS, customised OS and the RAM OS. For more information write to the company at 11 Shillitoe Rd, Parkstone, Pool, Dorset BH12 2BN.
- Mmmm, **Sony** has come up with a good idea. Preformatted PC disks so you don’t have to break into your on going work scenario to format your own. Price was not available at the time of going to press. Call 0784 467000 for further info. And here’s an *Express* tip – format a whole load of disks before you start.

NIBBLES

- **Epson** has launched a new laser printer as a follow-up to its GQ-5000 laser printer. The EPL-7100 costs £1,199 and comes, as yet, without PostScript support. This is expected at the beginning of 1991. The EPL gives 300 dpi, has 13 fonts with extra fonts available on card. It's got 512K of RAM expandable to 6Mb, and there are serial and parallel interfaces.
- Toyota cars were once seen as tacky and Japanese. Not anymore, and not according to **Gremlin** which is bringing out a new racing sim called *Celica GT4 Rally*. The game is due to be in the shops in November, and will run on the Amiga, ST, Spectrum and CPC.
- Europe 1992, you either love it or you don't love it, either way you and your PC can't avoid it. Business Development Systems realise this and has just released *Scripta*. This piece of software allows PC users to run software such as **Lotus *1-2-3***, *dBase*, and *WordStar 2000* in a number of other languages at the touch of a button. The lingoes include Russian, French, Arabic, Greek and scientific languages. For more information call 0204 696561.
- *Music 5000 Synthesiser Universal*, the £99 package for the **BBC** has just gained five new pieces of software. Each the products already exists but has been upgraded. They are: *Rhythm Maker*, *Compose Play*, *Basic Music Composition*, *Theory of Music Tutorial*, and *Theory of Music Questions*. To cope with all this, *Music 5000* has also been improved. It now includes a 'profile creator' to deal with any piece of software it has not previously encountered. For more information call 0223 420360.
- **Maplin Electronics** has released its new colour catalogue; *The 1991 Buyer's Guide to Electronic Components* costs £2.45 and contains information on everything from loudspeakers to satellite receivers. You can buy it from W H Smith or Maplin shops – there's a 50p reduction if you order direct. For information call 0702 554155.

Small footprint, will travel...

British PC manufacturer Opus Technology has launched a portable desktop PC with a 'super-small' footprint.

The firm is claiming that the BaseStation 286 is as light as a portable but doesn't suffer from the inherent defects of many portables; poor screen definition and limited power. Opus cites market research findings which suggest many owners of portable computers prefer to plug their machines directly into a standard monitor.

The BaseStation runs at 12MHz, measures 305mm x 330mm x 38mm and features a 40Mb hard disk. The idea is that users on the move can unplug the monitor, slip the base unit and keyboard into a carrying case and take them to a new location where there is a second monitor. It's being shown for the first time at the Business Computing '90 Show in Earls Court and it costs £899.

• BaseStation: desktop luggable.

New company aims to promote creative programmers

FIRM POINTS THE WAY FOR RADICAL GAMES

When you buy a record, or go to the movies, it's probably because you like the featured artist or star. Not so with games software. Apart from a few notable personalities, your only guide is the pedigree of faceless publishers such as Ocean or Mirrorsoft.

Now there's a new company, called Renagade, which aims to promote the people who do all the creative work – the people who actually produce the software.

The firm has been formed by a triumverate of talents – from the music industry comes Rhythm King's boss Martin Heath (who's firm did the music, *Megablast*, for *Xenon II*), from the world of programming comes Bitmap Brother Eric Matthews, and handling all the business stuff is former Mirrorsoft marketing whizz Tom Watson.

They intend on making names for their most talented, or personable programmers, designers and artists. To a certain extent this had been achieved by Mirrorsoft which tirelessly pushed the Bitmap Brothers forward, and pulled in Heath for the game *Xenon II*. The Bitmap Brothers aren't exactly new kids on the block but the approach worked. *Xenon II* is a great game and most shoot-'em-up fans will give the next Bitmap title more than a cursory glance.

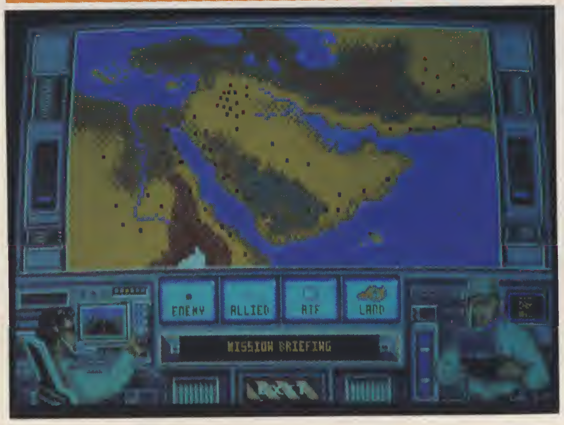
• *Matthews, Heath and Watson: a new approach*

Not surprisingly the first Renegade game will be from the Bitmaps – it'll be an eight way scrolling shoot-'em-up with elements of strategy and it's called *Gods*.

Those who have campaigned for programmers to receive more recognition will be interested in Renegade's internal structure. The company will be run in much the same way as a fledgling record label — artists will be getting a 50/50 cut of profits, and that includes rights on compilations and budget versions.

Renegade says it will be letting its artists talk about the games to press and public. The firm hopes this will be an improvement on turgid interviews with suits who don't really know the games inside-out.

• This approach has worked for Rhythm King in the music biz. But will it work for software buyers? Would you like to know more about the people who write games and hear less about how great Company X is? Or do you think that things are fine and dandy as they stand? Write to Express Mailbag at the usual address.



• Gulf simulator: topical or what?

More war!

Yes, another game which simulates the fight between one set of people who desire control of the world against another set who don't want them to have it.

This one's called *ATF II*, the initials standing for Advanced Tactical Fighter. The publisher, Digital International, claims that this is "next generation USAF Stealth Fighter." You get to play the pilot, learn how to fly the craft, and go out there and defeat the blighters.

***ATF II* costs £24.99, runs on the Amiga, ST and PC, and will be available in mid-October. ■**

Rent don't buy

Active Consoles has set up a rental system for Neo-Geo games.

Games will be rentable at £25 per month which compares more than well with the current cartridge prices of £150-200. Annual membership will cost £30.

Robert Stallibras of Active commented: "One of the things that has put some of the public off buying the Neo-Geo hardware has been the costs of the software. At last people will be able to buy the Neo-Geo at the same price as a 16-bit computer, but play far superior games."

For more on rental call 081-752 0260.

Apple of your eye

The Apple Macintosh isn't just any old computer – it's achieved a cult status almost rivaling that of the Volkswagen Beetle and *The Blues Brothers*.

That's the theory being presented by Cambridge University's head of the Information Management Department Dr Matthew Jones. The IMD has recently completed a study of the social nuances of home and small business computers.

Jones found that the Mac was preferred by most first-time users who were offered a number of options. He says it is far and away the most impressive microcomputer.

"There is a genuine enthusiasm for the machine. Mac users love their computer, they say it's fun to use, it's different, it's unique and they feel they are in control.

"What is important is not simply the psychology of the individual interacting with the terminal, but also the whole social and organisational context.

"People are not just purely interested in what the computer does, but they want to know what it looks like and how they feel using it. It is clear the Apple Mac holds some sort of attraction. One user said it was distinctive, even subversive. People like its individual design.

"It is becoming a cult object like the Volkswagen Beetle." ▪

- *Does the Mac really leave all other home computers standing? Or is Dr Jones talking through his hat? Let us know what you think by writing to the usual address.*

The Amstrad PCW – it's fast...

Words such as 'zippy' and 'nippy' aren't normally associated with Amstrad's workhorse the PCW. But now there's an add-on accelerator pack which, it's being claimed, makes the machine "incredibly fast".

Sprinter fits into the PCW's expansion port and needs no software set-up. And, according to manufacturer Cirtech, it makes *all* PCW programs run twice as fast – with no exceptions. A spokesman offered: "All functions of the PCW operate faster and documents scroll unbelievably quickly. It's like having a new computer."

Buyers are being offered Sprinter for £78 or you can pick it up with RAM expansion options. A full 1Mb will cost £198. Call 0835 23898. ▪

Apple's low cost micro delayed till '91

SETBACK FOR CLASSIC MAC

Apple has delayed the launch of its eagerly-awaited home based Macintosh until early next year.

The entry level Mac was to be unveiled next month, but it is understood that Apple wishes to stock-pile large numbers of the machine before any launch, thereby avoiding the possibility of shortages. Given the expected demand for the Classic in Europe Apple's fears are probably well-founded.

US sources say the machine will be called the Macintosh Classic and will be broadly similar to the best-selling Mac Plus and Mac SE. It is expected that the Classic will replace these older models. Many in the UK and Europe feel the cheaper Macintosh machines have been badly overpriced and blame Apple's insistence on appealing to professional users. The Classic marks the first pitch at the home market outside America.

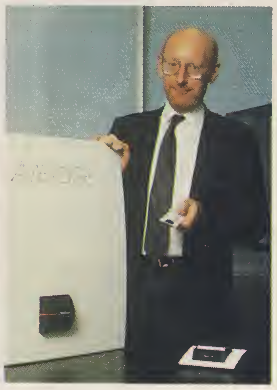
Apple wants to launch the machine here at roughly the same time as its US premiere. Prices should start around the £800 although any delay by Apple will mean a field day for grey importers.

The Classic will feature a built-in mono monitor with twin PC-compatible disk drives. There will be 1Mb of memory on board with a hard disk option.

- *The Mac: home version delayed.*

- According to the *Electronic Business* list of top executives, Apple's chairman John Sculley is the computer industry's biggest earner. He pulled in $2.25 million last year – more than $20 for every working second of 1989.

Microsoft's Bill Gates, who is worth more then anyone else in the computer biz, draws a measly salary of $500,000. ▪



- *Sir Clive: still banging the C5 drum.*

Sir Clive's drive

There can't be more than half a dozen comedians this side of Calais who haven't cracked gags about Sir Clive's useless invention, the C5. But Sinkers hasn't given up just yet.

The man who brought us the Speccy has developed a C5 which can manage a gasp-worthy 70 miles per hour – but that was just for fun.

His new project is a four-seater electric car with the same range as a family automobile. Naturally there will be no nasty fumes to send the kids crazy or loud engines to send everybody else mad. There will be an on-board computer telling drivers everything from weather forecasts to on-coming traffic situations (kind of like a radio).

Sir Clive told trade mag *Computer Talk*: "It's to do with global warming and pollution. Electric-powered cars are more efficient than petrol engines and the amount of pollution they produce is much lower." ▪

City pickers

How do you fancy your chances against our avaricious friends on the Stock Exchange? Think you're up to their standards of good old fashioned greed?

Folio Shareware reckons it's got a program which will test your money grabbing nerve. *MarketPlus* helps PC owners play the Stock Exchange for fun or for real.

The program stores the prices of stocks, shares and funds and lets the user follow the progress of investments in a graphic form.

You can even add 'buy and sell' markers to help you with decisions.

It costs £7. Call 0274 393679. ▪

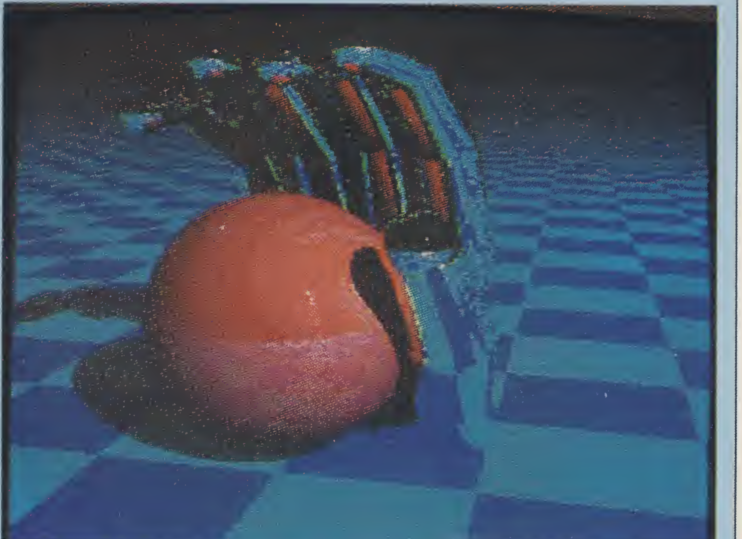
It's the real thing in Amiga graphics

Some Amiga owners will argue that getting into graphics is not just an option for fellow users – it's a must.

This week sees the launch of the latest in a long line of ray-tracing programs for Commodore's machine. Curiously, *Real 3D* hails from Iceland – but it does have some good points. It can be used by professionals putting together fancy logos or business graphics presentations, or the beginner can doodle around and create something out of the ordinary.

The editor allows artists to see the drawn object in three different directions and you can follow changes like rotation, stretch and colour changes. There's also the usual reflection, transparency and refractive properties as well as the ability to view objects as wireframes.

A beginners program starts at £99 with a Pro version costing £299 and the Turbo kit weighing in at £379. Call distributor Amiga Centre Scotland on 031-557 4242. ▪



- *(Right) Handy tool: this took just 40 minutes.*

THE WEEK IN VIEW

As Amstrad launches its new Generation 3 range, software distributor William Poel asks: When is a PC not a PC?

If you hadn't noticed, times are hard for the computer trade. This can only be because PC users do not properly understand that the new generations of 386/486 PCs are emphatically not just faster XTs or ATs.

Far too many people in the PC trade do not realise that just because a 386 PC looks like any other PC, which needs no special tweaking to work to its maximum potential, doesn't mean it can perform the miracle of multitasking and complete memory management on its own without any assistance from software.

Software products like Concurrent DOS and DESQview have been multitasking regular DOS applications, generally using expanded memory with the 8088/80286 families, for years – but the expanded memory managers for these types of hardware have to be specific to that hardware. And without having total control of the memory manager, it is simply impossible to be categorical about the absolute benefits of such an environment.

> *PC users do not properly understand that the new generations of 386/486 PCs are emphatically not just faster XTs or ATs*

The 386 changes all that, and software like DESQview 386 knows precisely where the goalposts have been planted. In practical terms, 386 users can have several PCs simultaneously available on their desk if they choose.

You lot have never had it so good because you can multi-task and switch between regular DOS, GEM and even Windows applications in separate DESQview windows.And all this is available without submitting to OS/2. You simply use the DOS that God gave you.

Readers of enthusiasts' magazines like *NCE* ought to know this already, but the clear evidence is that PC manufacturers like Amstrad and Samsung still do not, because they sell their 386 wares without the magic software that sets them apart from fast XTs.

Worse, many still supply them with the obligatory 1Mb of memory in useless 256K SIMMs. And what's the first thing you do when you need to expand this memory? Why, you throw away the existing memory and start again.

Pray for the day when market pressure insists these rascals use only 1Mb SIMMs, so in order to add another megabyte, you buy one 1Mb SIMM and stuff it in. Maybe *NCE* should publish the list of PC makers who pull this con trick and sham them out of it.

So 386 kit is a bargain. Go out and buy one today! And you might as well buy an Amstrad 386SX box for around £1,500 with monitor, since it doesn't hit the balance of payments as hard as most others. OK, you may well have paid twice that much a year ago for a fancy 286 PC, but cut your losses now and start to increase your productivity dramatically. ▪

Express Access

Hey! Get in touch with us! *Express* is always on the look out for news leads and tip-offs – and we'll pay you for passing them on too!

Also, if you have any burning ideas for features or surveys then drop us a line – remember, we cover every aspect of computing.

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ABC audited circulation January-June 1990:
21,251 copies per week

We regret we cannot enter into any personal correspondence. Technical enquiries should be addressed to Tech Tips at the address below.

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■ Unending debate

Having read many different readers' letters on the subject of 'My computer is bigger, beefier and better than yours', I am left with what I feel are conclusions that hopefully the intelligent readers out there will agree with (and the less intelligent who write these letters will at least try to understand). These are:

In the end, the computer is only as powerful as the task put to it. An Amiga 3000 is the same as an Atari ST if all that is needed is a word processor (although software is another matter).

To the games player or computer 'snob' the only real way of determining which computer is the best is to compare technical specification sheets and run comprehensive benchmark tests, and then arrive at an overall performance factor for each one.

Then again, there are other factors as to which computer is the best to buy - such as price, the price of software, the amount and variety of software available, and reliability of hardware and operating system to name but a few.

Let's see less of these silly emotional letters and more logical letters - Captain.

Mike Bredbury, Manchester.

All very well and sensible Mike, but you take no account of human nature. Once someone buys a new toy, then he or she wants to tell the world how wonderful it is, and how much better it is that all the other toys that all the other people in the world own. Which accounts, in part, for the occasional rabid outpouring...

Anyway, there's no such thing as a definitive, comparative performance test for computers. Benchmarks are just something computer journalists and magazine publishers dreamt up years ago so they wouldn't have to think too much when they reviewed kit and could produce lots of pretty graphs and charts for their pages.

H F-W

■ Cribbing homework?

I am studying for an A/S-level in Design Technology, and for the project element of the course I chose to design a portable random number generator for use with role playing games as an alternative to conventional dice.

I would be grateful if anyone who has any information on random number generation could get in touch with me as any such information would be extremely valuable to my project.

Alistair Starling, 43 Newington,
Willingham, Cambs CB4 5JE

The only random number generator I have any experience of is the one that seems to be fitted to every diesel pump in every garage in the land.

All you have to do is take your hand off the trigger on the filler nozzle when you think you've just reached £5.00 and the pumps seem to generate a random number of pence which are then added on to the petrol pump display and your bill.

Anyone out there feel like helping Alistair with his project?

H F-W

■ Another free ad

I'm writing to inform you about the latest public domain library for the SAM Coupé. It's called Coupé Crazy and is at the moment charging a mere £1.50 for four programs. Send a stamped addressed envelope to me for full details.

Nicholas Marchetti, 7 Thornton Road,
Higher Bebington, Wirral, Merseyside
L63 5PN

Right. That's just about the very last free plug you'll see on these pages.

No, I've nothing against owners of so-called 'minority' machines - but we run a lovely free classified advertisement service in Shopping Express, and if you've got something to tell people about you're going to have to use the free ad service in future. So there.

Probably.

H F-W

■ Howls of protest

Just a final word to say that I shall never purchase your so-called all format magazine again. The turnaround shown by the 'Powers That Be' rivals the pigs at *C&VG*, which only a few issues before they dropped their MSX support, crowed 'we shall always support minority machines'.

I have have supported your magazine since the start, yes all 96 magazines including the free issue on *ACE*, so at that calculation I have supported your magazine to the tune of £47.28 and I had hoped to extend my loyalty forever!

But thanks to your traitor of a publisher, your MSX, BBC and other 'minority' machine coverage is to end, and so is my support.

I hope this absurd decision is reversed, otherwise I hope your magazine folds, like so many others which promised much and delivered so little.

Bradford Pearce, Pontypool, Gwent

'Pigs' indeed. If that's your attitude we're better off without you. Still, sorry to see you going Bradford.

You surely can't tell me that you had £47.29's-worth of value from the 'minority' machine columns over the years? The new-look *Express* that hit the streets last week offers bags more value than its predecessors - even if you do add in the fact that the price increased by 12p. *Express* now offers much better value that it ever did; that's my story and you're stuck with it.

Anyway, our magazine will to fold every week, right down the middle.

H F-W

■ Unveiled threat

Sir/Madam

I'll give you four weeks to reintroduce the columns for ' the less popular machines' or I will discontinue my arrangement with the newsagent, who saves a copy of *Express* for me.

Ian Jackaman, Sidcup, Kent

Up to you Ian - they're not coming back. That's not to say *NCE* has abandoned all plans to give the 'minorities' coverage in Shopping Express and elsewhere - if anything exciting starts happening out there, we'll be reporting on it. A hundred and fifty words on the QL or MSX every week isn't much good to anyone if you stop and think about it - but the occasional splurge on the latest developments in some dark corner of computing could make an interesting read for everyone...

H F-W

■ Taking an inch!

I was sorry to read that you are to drop the SAM Coupé column along with a few others - especially as SAM support seems quite strong and enthusiastic. Robin Alway has maintained a friendly, informative and interesting column. The least you could have done was merge his two columns (that'd save an inch of space on the title alone!).

I shall probably buy *Express* occasionally, but not every week without fail, as I have done.

Phil Glover, Birmingham

But we haven't banished the Coupé or any other machine to the uncharted wastes of anonymity for ever. Just to show willing, here's a spot of useful information for you: Brian Mumford, at 57 St Saviours Road, West Croydon, Surrey CR0 2XE and the Spectrum Discovery Club is currently doing some very interesting things with Coupé Connection at the moment.

And seeing as how you were far and away the politest of the four (count 'em) letters of complaint we received before going to press, I'm sending you a crisp fiver - why don't you send Brian £1.50 of it with my regards and get yourself the latest 780K Coupé Connection disk?

Anyone else care to drop me a line about the changes we've made (other than complaints about the lack of minority coverage, that is)?

H F-W

■ Cut-up customer

I've been buying your brilliant mag for a few months now and think its the best weekly computer mag ever.

I have only one complaint.

I hate having to cut up the mag to enter a competition. All the competitions I've seen, of which I've entered most and have not won anything yet, involve cutting the entry forms out of the pages.

Couldn't you use some other method like having the entry form on a card with the side that is attached to the mag - perforated so that it can be torn off without actually damaging the mag itself?

I'm sure there are other *NCE* enthusiasts who feel the same way about this.

Islam Uddin, London

Tim 'Part-time Competition Editor' Smith says he's more than happy to receive entries on the back of an envelope or interesting postcard. Either copy out the entry form neatly and legibly, or photocopy it and stick it on your missive, or even just scribble down your name and address with the answers to the questions and the machine you own and send the entry in to the usual address.

And when Tim says 'interesting' in respect to postcards, he doesn't just mean smutty ones. End of public service announcement.

H F-W

■ Smutty answer

Perhaps you could tell me what happened to Astrid? I'm not sure the exact time it was out, but it was before I had a computer - about ten years ago, and when ICL built a laptop with a built-in modem and microdrives. What did Astrid do, anyway?

Phil Ramsey, Burtonwood, Cheshire

Four fivers to you this week Phil, for getting my mind a-wandering and amusing me greatly. Those of a sensitive disposition should not read any more of this answer. Stop now, and go on to the next letter if you're the kind of person who gets offended when you see rude words in print. I don't believe in asterisks, you see...

Sadly, a quick poll of the office experts couldn't raise anyone who knew who, or rather what, Astrid was. No doubt she was another 'personality' computer that pre-dated Arnold, Joyce and so on. Maybe someone reading this would like to enlighten us all? The usual crisp fiver is on offer.

As to that ICL machine, you are no doubt referring to the not-terribly-well-fated One Per Desk project, or the QLiphone as it was known in some quarters. The One Per Desk had a sibling, the Tonto which also didn't set the computing world alight (although it found its way into lots of ambulance stations for some reason). Poor old Tonto was blessed with a rather silly name, which can't have helped - bringing the Lone Ranger into mental view every time it was mentioned, and worse in Spain, where the word 'Tonto' apparently means 'idiot'.

As for unfortunate names associated with computing, the truly wonderful page makeup package I use on my Mac IIfx to prepare these pages is called *XPress,* and is published by a company called Quark. Fine and dandy in most parts of the world, but a bit strange in Germany and certain other places - where the word 'quark' refers to a sort of soft, squidgy cheese.

But poor old Commodore must have had the worst string of luck as far as naming products for international markets goes. The very first mass-market micro CBM produced was the Pet - a cute and cuddly name for English-speakers, but rather unfortunate in France where the word Pét means 'fart'.

Next on the CBM release schedule was the trusty Vic 20 (the first computer I bought, incidentally). German customers might have found themselves a little off-put by the challenge of going into a computer store and asking for what literally translated as a 'Fuck 20'. "Will that be with or without the cassette deck, sir?"

No wonder the Commodore 16-bit machine is known by the innocuous name 'Amiga', which is kind of pig-Spanish for girlfriend. Sheer good luck, I suppose, that they didn't add five to the name of its 8-bit precursor.

Any other tales of internationally-unfortunate nomenclature will be gratefully received and generously rewarded...

H F-W

■ Old sailor

I'm a geriatric Amiga 500 owner keen on for-real flight sims. I cut my false teeth on Interceptor first, costing the US government billions of dollars every time I came in to land.

My computer is bigger, better and beefier that yours...: *See 'Unending Debate'.*

My current preoccupation is SubLogic's *Flight Simulator II*, and thanks to Charles Gulick, my flying time is much more professional and accident-free these days. I'd recommend Mr Gulick's 'Flying Flight Simulator' very heartily. Take that Cessna up and have a for-real fly around, or under if you like... the Golden Gate bridge. I've done that, and also buzzed the statue of Liberty. (Sorry M'am!)

But I'm an old sailor really, and wonder if you know of any software that will let me sail in something like a 36-footer, visiting different places, plotting a course and so on, all without the danger of getting my old bones wet.

Jim McIellan, 353 Norbreck Road,
Thornton Cleveleys, Lancashire
FY5 1PB

Bad news Jim Lad - half an hour of brain-racking didn't come up with a single title that would allow you to set the yardarm on your Amiga, splice the hard drive and shiver your chips. Except possibly *Pirates* from MicroProse which isn't quite what you have in mind but is suitably nautical and might provide an old sea-dog like yourself with hours and hours of fun.

You could always try giving Special Reserve a ring, Jim. They're well clued-up and reachable on 0279 600770 and might know of a suitably nautical romp that would suit your tastes.

And if anyone reading this can help, drop Jim a line and help him with his briny ambitions, eh?

H F-W

■ Sychophantic stuff!

Can I just be the first to congratulate you on the new-look *Express*? Issue 97. Shopping Express is really good now that you have got rid of those 'what to buy' listings and added the new sections.

That virtual reality feature was really cool - but how virtual is virtual, eh? And what is reality anyway? I often find myself really absorbed in the world of a computer game - like *Populous,* for instance or a really good adventure game. Do we really need all these high-tech gadgets to help us into another plane?

I reckon imagination is still the best escape route, aided and abetted by a bit of mind-expanding software that is.

Pat Watson, Tring, Herts

Yup, there's certainly some weird stuff going down out there in the future of computing. And some pretty weird people doing it to, if that *Mondo 2000* magazine is any kind of benchmark. Just what is it about Californians, anyway?

Well, that's a wrap for this week. Don't forget, I've got plenty of fivers to give away - so send me your views, opinions and comments or even pictures. Who knows, it could be you that gets lucky next week! ■

MAIL SHORTS

■ Obsessed?

Why is Steve Carey so obsessed with MIDI software? Does he think that most of us have houses crammed with Korg M1s, DX7s etc? Nothing personal Steve, but let's have a bit more balance - STs are used for things other than music y'know!

David Baron, Castleford, Yorks

Steve Carey is in fact obsessed with James Joyce, pedantry (look it up if you need to) and a small furry animal by the name of Matinique. None of which I intend to go into any further. Anyone else got any comments about our new-look, new-approach machine specific columns in this or the last issue? Drop me a line and join the queue for fivers...

■ Big player

I noticed an article in Issue 95 about C64 budget games goin' up a pound. As the writer of many C64 budget games/compilations, I don't think this is fair so I am keepin' the budget games that LB Software write at £1.00 - £2.00.

'L S Bebbington, Winsford, Cheshire

Er yes. Well that should set the software publishing industry alight with waves of solidarity, shouldn't it?

■ No I couldn't!

'See What Money DOS for you' you headline over the picture of Microsoft's Bill Gates said last issue.

'No I can't', I shouted out loud after peering at the page sideways, up-side-down and at a whole variety of acute and obtuse angles.

Are you trying to make my life a misery, or what?

B Byard, Hereford

Not at all. But the Editor has been making his Deputy Stuart's life a misery for the past eight hours. It'll never happen again, honest.

■ Real nightmare

Aargh! Computerised cars of the future that feature Cabinet Ministers gesticulating at you from the dashboard in place of those soothing female voices from microchips reminding you to 'Clunk click'? Then I read your story on page 6 and felt much better!

Simon Fitch, Wednesbury

I sympathise entirely. The *Express* picture desk has been asked to take more care when running potentially disturbing pictures in the future

H F-W

PLAYING W

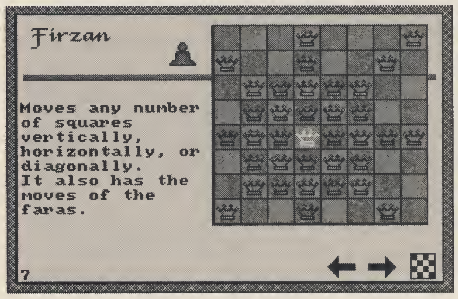
There's more than one game of chess; Distant Armies features no less than 10 variants on the familiar theme...

Before I even start on this review I should make two things clear: firstly *Distant Armies* is an Amiga-only game so far which is a damn shame, and secondly it would make any half decent games player wilt with joy.

Ostensibly this is a chess compilation; a kind of games of many nations job. Don't be fooled; within the sober packaging lie 10 variations of the great game from around the world, and throughout time. Thankfully, the publisher has not been suckered into adding a 'future chess' option with its own ideas. Nope, all the variations here have a firm basis in chess, and world, history. You can go back as far as Chaturanga chess, developed thousands of years ago, and fit to blow the circuits of any serious games player, let alone a simple chessy. You can go as far forward as Los Alamos chess, an apparently simplified game which enraptured many an A-bomb designer.

CHESS THE THING

Get one thing straight before approaching this package; it is not for the smug chess-buff. Don't venture into it with the thought that you know what you're doing. The flavour of chess hangs on the playing palate, but the main course has changed. You would be better off forgetting everything you know about the game except for raw strategy and tactical thinking.



Moves any number of squares vertically, horizontally, or diagonally. It also has the moves of the faras.

• *Who's this little fella? Looks like flattened pawn, moves like a queen, and is tricky as hell. All from the in-game help option.*

Once into the main body of the game, a pleasant opening screen has a king doing a fair impression of *Space Harrier*, you find yourself at the menu. Here you will see a map of the world, 10 game boxes and a large action box. Click on any of the games and you will be shown its geographical home. Click on Play and you will be brought to the 2D board – there is a 3D view available. Now the foolhardy would begin to play.

The slightly wiser person would use the on-board help option to discover what each piece does. By clicking on a piece with the help icon you are told given a graphic view of its moves, as well as a brief textual explanation; this sould enlighten you.

The extremely astute player will first read the history of their chosen game this really does add to the enjoyment while playing. The next thing to do is to give the rules a damned good looking over - they all differ radically from conventional chess. Both these chunks of text are reasonably written with none of the usual spelling and grammatical mistakes commonly found in computer game text files.

ROBOCHESS

Once you've had a good look over these and realised that you've got a great deal more than you bargained for, it's time to play. As I have already mentioned, you have two viewing options, however, the cosmetics don't stop there. The colour editing option kept me happy for a while. Well, after having been beaten solidly for the first two games of Decimal chess I needed something to cheer me up. You get to alter the pieces, the board and the background. Excellent, especially if you're like me and like to play with orange pieces on a beige board with a shocking pink background.

Having then been beaten several times on the Byzantine option – it's circular and nothing moves as you would expect it to – it was then time to alter the narrator. Laugh, I thought I'd split me knight fork. The online narrator yells things at you such as "IT'S YOUR TURN NOW!!!" or "ILLEGAL MOVE!!" in such a way as would convince you that you were in fact playing *Robocop* – you know, "You have 10 seconds to put

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PROTEXT SURVIV

A new incarnation of the popular multi-format word processor Protext features pull-down menus and an on-line spelling checker...

If I declare my hand from the start, I have to admit that I am a *Protext* lover and have been ever since the ROM version for the CPC put real speed into word processing. *Protext* grew up on most of the popular formats and is available for CPC, PCW, Amiga, ST, PC and Archimedes. The 8-bit versions stretched the CPC and PCW to their respective limits

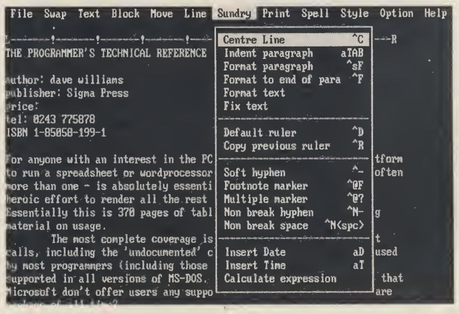
With the 16-bit versions came more flexible features and more available memory and version four was born. Version four took on board the larger memory available to 16-bit computers and used other features such as processor speed and environment effectively.

USER FRIENDLY

Some of the heavyweight word processors costing several hundreds of pounds were beginning to grow features born of the user friendly interfaces then becoming popular. Pull down menus were beginning to replace the command line, multiple file handling and on line spelling checkers and mail mergers were the order of the day.

While *Protext* 4 was a well featured and functional word engine, there were extra features in demand and *Protext* 5 is the result.

Version 5 is released on the PC, Amiga and ST simultaneously and on the Archimedes soon. With the three disks of main program, dictionary and printer drivers comes a pair of manuals. The manuals are spiral bound so that they will lie flat on the desk and are penned by journalist David Foster. A 380-page *User Guide and Reference* is complimented by a 48-page tutorial that guides both new and experienced *Protext* users through the pull down menus and new file handling routines.



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THE PROGRAMMER'S TECHNICAL REFERENCE

uthor: dave williams
ublisher: Sigma Press
rice:
tel: 0243 775878
ISBN 1-85058-199-1

or anyone with an interest in the PC
o run a spreadsheet or wordprocessor
ore than one - is absolutely essenti
eroic effort to render all the rest
ssentially this is 370 pages of tabl
aterial on usage.
      The most complete coverage is
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• *Drop-down menus at last!*

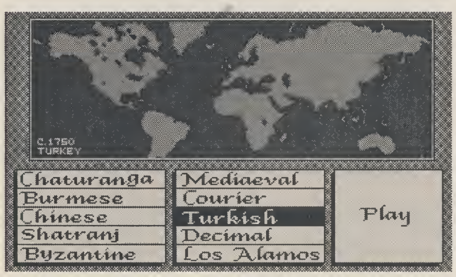
Existing *Protext* users won't get too much of a culture shock. The familiar friendly command line interface is still there only a push of the [Escape] key away. It is important that the familiar feel is still there; this will allow existing users to keep up their productivity while learning the new features.

A mouse is supported but if you haven't one (or don't want to use one) a deft flick of [F3] gets the menu bars to drop down. Cursor keys make the choice and your choice from the appropriate menu is actioned. There are separate menus for File, Swap, Text, Block, Move, Line, Sundry, Print, Spell, Option and Help and with each menu comes a multiple choice of features.

The biggest new feature in *Protext* is the ability to work on several files at once. The number of files that can be opened at once depends on the size of the file and the size of the memory available but there is a maximum limit of 36 files.

With two files open on screen, split screen editing and up to 34 more documents held in memory at any time the mouse/menu interface makes *Protext* flexible

ITH HISTORY



• *Each one of these chess variations could fry your brain.*

down your queen." Editing the narrator means altering his, or her, pitch, volume and general speechifying in order to obtain a pleasant patrician tone. But, the more I edited, the less like Ralph Richardson it sounded so I decided to stick with the musical tone.

BURMESE DAZE

Returning to the board, I decided to have a bash at Burmese chess. This had to be easy, how many Burmese grand masters have their been? Wrong again, I was thinking in terms of conventional chess whereas Burmese chess is twice as subtle and three times as addictive.

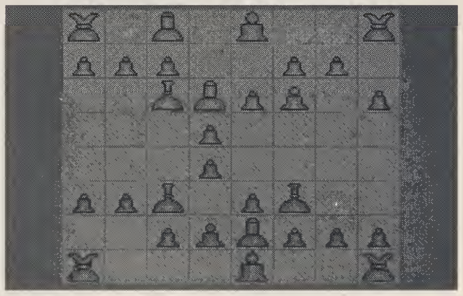
The initial section is concerned with setting up the pieces. This is not your run of the mill wacking them down faster than your opponent in order to gain some egotistical speed advantage. No, because the major movers can be set up anywhere you like on the board, or at least behind the two lines of Nes, the pawn equivalents (each player gets two lines), this setting-up process can be a drawn-out affair. It tests the nerves and the knowledge of the game, and there is an etiquette to the process. There's even a vague sense of style, this is not simply your standard flop-out-your-pieces-love thuggery. We're in Burma here, so relax, chill out and prepare for one of the best games of your life.

Of course, you can watch the computer playing itself. You can alter the computer's skill. You could even play someone else. Try the Chinese version for a laugh. There is a river across the middle of the board, pieces are promoted in the weirdest ways and the whole feel of the game is so alien to occidental playing styles that the addictivness becomes too much. I had to rush off for a quick game of *Kick Off* in order to regain some perspective. Each one of the games features different, but never illogical, piece moves. The knight appears to be the the only constant throughout chess history. Queens become pathetic little blocks, rooks turn into brutal muggers, and there are even turbo charged bishops.

The attention to detail in the *Distant Armies* is quite stunning as well. Instead of copping out and giving each of the games the same set of pieces, the programmers have even bothered to provide new sets for each one. This gives the illusion that you have bought ten games worth about 20 notes each instead of one package. The animation is excellent, in fact the only thing they've really missed out on is parallax!.Pieces are drawn well, move well and 'feel' real.

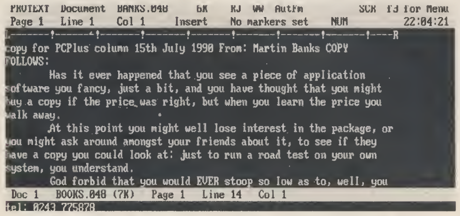
If *Express* gave game ratings, I'd have to give *Distant Armies* 94 per cent and no argument. If you're a chess player, buy it. If you hate chess but love good game play, buy it. Superb.■

Distant Armies *costs £24.99 from Exocet. It is available for the Amiga only.*



• *A game in action. Gawd knows what to do know. There are so many games to be played in this compilation heads will hurt.*

VES



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copy for PCPlus column 15th July 1990 From: Martin Banks COPY
FOLLOWS:
        Has it ever happened that you see a piece of application
software you fancy, just a bit, and you have thought that you might
buy a copy if the price was right, but when you learn the price you
walk away.
        At this point you might well lose interest in the package, or
you might ask around amongst your friends about it, to see if they
have a copy you could look at: just to run a road test on your own
system, you understand.
        God forbid that you would EVER stoop so low as to, well, you
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tel: 0243 775878
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• *A split screen allows you two view two of the possible 36 documents in the memory.*

enough to edit a whole novel at once by paging the chapters in as required.

EITHER WAY

With *Protext* up on screen, I found myself reaching for the friendly Escape key to get me to the familiar *Protext* command line and the program ran happily enough from either command line or menus. Getting used to using the mouse with *Protext* came quickly enough and at one point I was reaching mousewards with my right hand while hitting the [Escape] key with my left!

Letters to pen friends in foreign parts posed no problem. 27 languages are supported although not all of these can be handled by a simple dot-matrix printer. Recommended printers are 24-pin or laser for the best output of the foreign fonts.

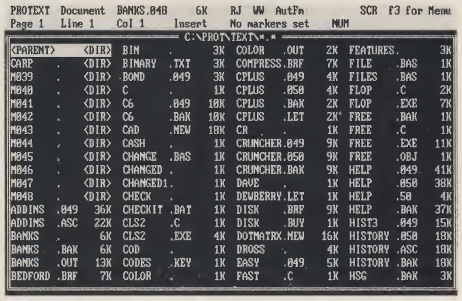
Protext now contains an 120,000 word Collins dictionary on board and with options to look up alter and add words at will it soon whisked through any text. To fill in the frustrating times between creative spells there's an anagram feature to help you through those cryptic crosswords. If you're working exclusively in a foreign language, there are German and Swedish dictionaries available now. Other dictionaries are planned and in development.

For the occasion when a similar document must be sent to several places, there's a rather elegant mail merger included that can lift all the necessary data fields from one file and transfer them to the appropriate places in the target document.

Indices and contents generators, footnotes and several things that I never thought I'd need before I needed them are included. The flexible way that *Protext* can use embedded commands combined with the friendly new interface means that it has grown from a word processor to a document processor and the £149.95 price puts it at the cheap end of the heavyweights.

Protext 5 is available on the PC, ST and Amiga with the Archimedes version only a couple of weeks away. The different machines versions only differ in tiny details and the same manual and tutorials are provided whatever the version. Someone working on *Protext* 5 in the office would be equally at home on the ST, Amiga or Arc versions. This review was typed on all four versions then assembled on a PC. ■

Protext *5 costs £149.95, or £125 if ordered before Sept 30. An upgrade from version 4.2 costs £60 (£49.50 up to Sept 30). Arnor can be found on 0733 68909.*



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ADDINS   .ASC   22K  CLS2     .C      1K  DISK     .BUY    1K  HIST3    .049  15K
BANKS    .       6K  CLS2     .EXE    4K  DOTMATRX.NEW    16K  HISTORY  .050  18K
BANKS    .BAK    6K  COD      .       1K  DROSS    .       4K  HISTORY  .ASC  18K
BANKS    .OUT   13K  CODES    .KEY    1K  EASY     .049    5K  HISTORY  .BAK  18K
BEDFORD  .BRF    7K  COLOR    .       1K  FAST     .C      1K  HSG      .BAK   3K
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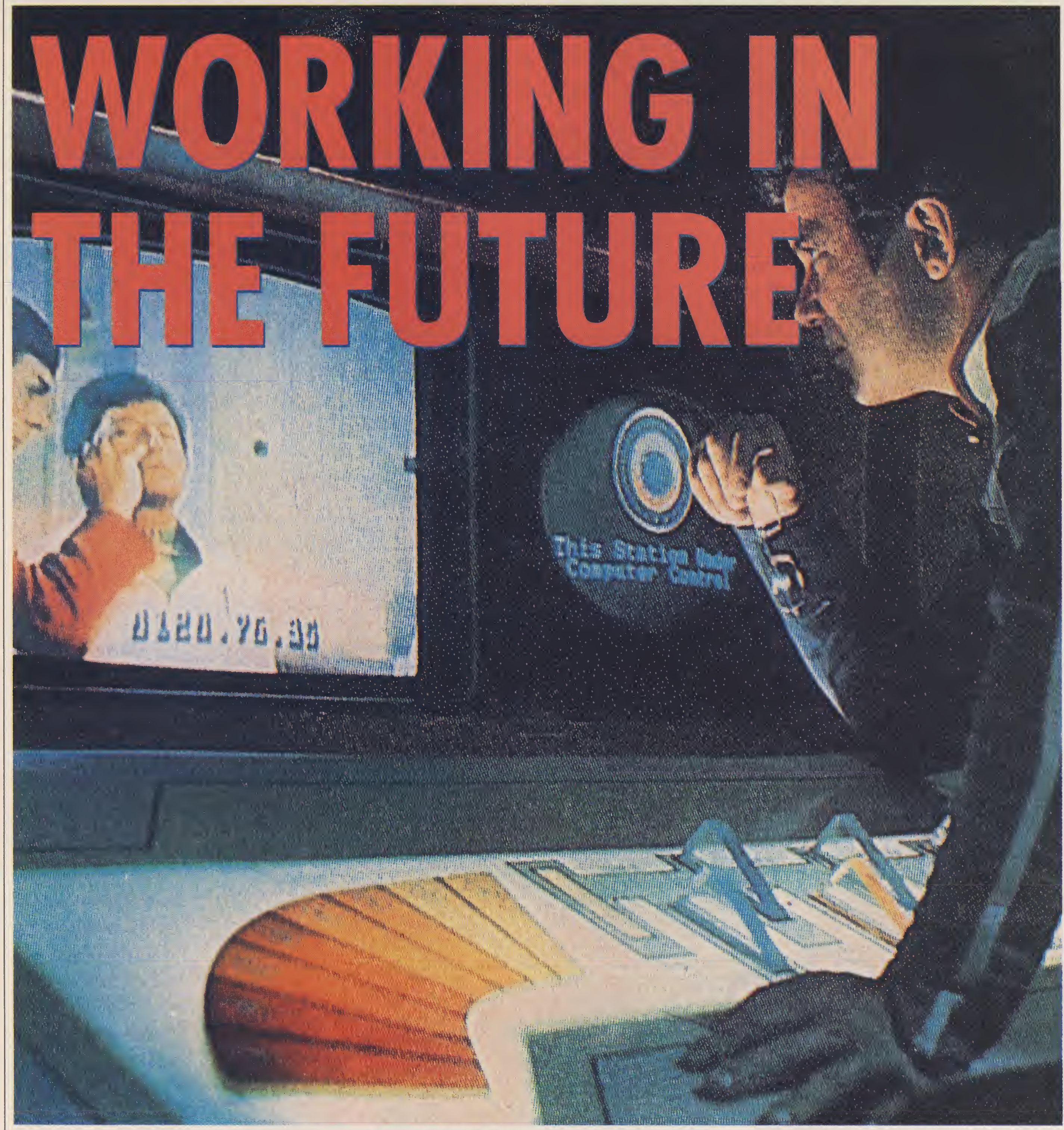


Hardware is changing fast, but will it change the way we use our computers? Mike Hardaker examines the developments that could see the PC on the desk taking on more and more of our work...

Everyone seems to be wondering what the next 'standard' microcomputer will be. The market presence of IBM ensured the success of the PC running MS-DOS on on one of the Intel 8086 family of microprocessors throughout the Eighties. It was helped by a competent, if uninspiring, 'open' design which shrewdly encouraged third parties to design add-ons and software for it. Now bets are being taken over which basic design will have the same status for the Nineties and beyond.

The simple answer may well be that there will be no single hardware standard. The IBM PC secured control of a fragmented, immature market – people thought it might be a good idea to buy a PC even though they were not entirely sure what the machines could be used for. IBM legitimised the business, making it a safe business decision to buy a micro.

Now there are millions of microcomputers in the business world, users have rather different sets of requirements – requirements which may not be best served by a single hardware standard. The issue of compatibility is key, but compatibility need not be at the lowest level.

We are unlikely to see the situation of the mid-1980s repeated, where one hardware standard dominated the microcomputer world. Instead, users will buy the hardware which most suits their individual requirements. This will vary in size from deskside towers to credit-card data-entry tools which can then be plugged into a larger machine. They will vary in power with the most powerful microcomputers probably producing as many MIPS as today's biggest mainframes. And they will vary in function, with specialised machines being particularly common at both the smallest end (devoted to a particular data-entry job, for example) and the largest (file and computing servers).

Any predictions about the future are bound to be laced with guesswork, but one thing that can be said with absolute certainty is that they will be significantly cheaper than today and signficantly more powerful. ➤

VIDEO

The quality of images which can be seen on computer screens has increased extremely rapidly over the last decade. It will continue to do so, the odds being that computer video standards will merge with those for high-definition television (HDTV).

The ability to process visual images will increase greatly too, as more and more computers have a dedicated graphics processor fitted. This will make it easier to introduce the new capabilities which are being demanded, such as full-motion video.

There are already kits out which can make most popular business computers behave like a television. These will gradually become common, and then standard. In conjunction with the sound and storage elements, this will provide a videophone/videoconferencing facility for users with compatible systems (hence the need, once again, for a universally accepted standard). As the global nature of business increases, this allows workgroups to be created where the individual members of a team need not be based in a single location. For smaller businesses it provides the opportunity to 'meet' potential clients in remote countries without having to fly there.

Image recognition is another area which will develop, with a whole host of applications possible in the security field – combining a speech recognition program with a signature-tester, for example. Manufacturing industry could use such a system for quality control, using very high-definition recognition systems to weed out any products which were manufactured outside accepted production tolerances. Many of the new applications will only become clear when the technology is on the streets.

• Top class video will revolutionise computing.

COMPATIBILITY

• Compatibility is a vital issue. Nearly 10 years on an IBM PC can still run software designed for its great granddaddy.

This includes the key area of portability – the ability to move stuff from one computer to another, different, system. Unix has been growing slowly over the past few years due to its ability to run on various computers. This allows the same application to run on various manufacturers' kit.

The next step is to raise the level of the 'man-machine interface' so that programmers are talking to the GUI rather than the operating system (see User Interfaces). This means that only one program, an interface, has to be written so that it is genuinely portable while all others are written to a common set of hooks. This brings true portability at last, as well as freeing users from dependence on a particular operating system and thus hardware design.

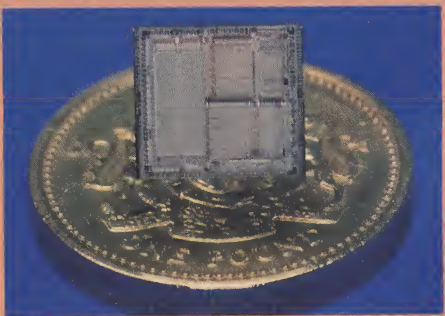
Even in today's confused environment it is possible, by using object-oriented programming techniques, to use the same kernel of code in products for many different architectures – as Lotus has shown with *1-2-3* for machines as disparate as a PC-XT, DEC minicomputers and IBM mainframes. If the operating system handles more system services and the GUI provides a common set of programming hooks, exactly the same code can be used.

However, the conservatism of many users will demand that the system is also able to run 1980s tasks as though it was an older machine. This should not be a problem, as software emulators running on a very fast 1990s processor should deliver adequate speed. Alternatively, a second processor can be used to provide a dedicated environment.

PROCESSORS

Since the Z80, 6502 and 8080-led days of 10 years ago, two families of processors have dominated the microcomputer world. The Intel 8086 family is used in the IBM PC and its derivatives, together with some workstations. The Motorola 68000, on the other hand, does the hard work for the Mac, the ST, the Amiga, together with some other workstations. The conservative nature of many purchasers (together with the fact that the 80486 and 68040 are genuinely pokey microprocessors) will keep sales of these chips steady for some time. The 80586 and 68050 will be devastatingly powerful by today's standards but the need to retain hardware compatibility with the decade-old 8086 and 68000 will always make them vulnerable to the next generation of processors.

These are the RISC (Reduced Instruction Set Computer) chips which are used by all the workstations which don't use Intel or Motorola processors, together with various other machines such as the Archimedes. Quite simply, if the the level at which compatibility becomes an issue is raised from the microprocessor to the user interface, these processors can expect to have a field day. In essence, they offer more raw power for less money than conventional chips.



• The RISC Transputer shows the way for future microchips.

Currently under development are MISC (Minimum Instruction Set Computer) chips. These take the principles behind RISC chips – the fact that a simple instruction set can be processed far more economically than a complex one – to their logical extremes. One of the people believed to be currently working on MISC chips is Sir Clive Sinclair, so perhaps we may see the resurgence of Britain's own bearded wonder. But then again, perhaps we won't. The next generation of chips will almost definitely be laser-based, using light switches rather than conventional electronics.

Another feature of a move away from hardware dependence will be the near-extinction of the single-processor microcomputer. New architectures (following the lead of companies such as Compaq, with its FLEX architecture) will allow the building of desktop machines which have two or more main processors. As mainframe designers have shown for years, this is a very cost-effective way of producing dramatic increases in power. Extensions of bus-mastering technologies as found in the PC's competing Microchannel and EISA buses will allow child processors to take care of specific jobs. Typically these will be disk handling, video management and communications. Specialised processors can be used for each of these jobs, leaving a dedicated number-crunching MISC chip at the centre of things to do what it does best – one more nail in the coffin for the 8086/68000-type chip.

COMMUNICATIONS

This is going to be one of the biggest growth areas of the next 20 years. Sure, people have been saying that for years, but the big problem with comms is that you need the hardware infrastructure in place before you can do anything constructive. It's no use dreaming about dialling up at 10 megabits/sec if you're plugged into an old analogue telephone exchange.

The slow but sure installation of miles of optical fibre has done a lot to ease the way for a comms revolution, as has the vigorous setting of standards by the CCITT, EIA and the world's line suppliers. The creation of the IDDI (International Digital Data Interface) standards means that high-speed digital communication is now possible to and from many places in the world – without the expense of privately-owned leased lines. At the moment this is strictly for the rich big businesses – but 2,400 bps modems were like that a decade ago.

The development of new, high-speed switches means that very high speed high-bandwidth networking is now a practical proposition – which, together with increasingly sophisticated compression algorithms, means that sound and real-time video can be passed on the same network as data, at the same time. This will first be seen in Local Area Networks (LANs) running at speeds of up to 50 megabits per second. Later in the nineties, the first MANs (Metropolitan Area Networks) will become genuinely operational, offering the same sort of speeds around areas the size of an average city. Once that is in place, a few high-speed trunks routes between gateways at each of the major cities will allow wide area communications at speeds which would sound extraordinarily impressive on today's LANs.

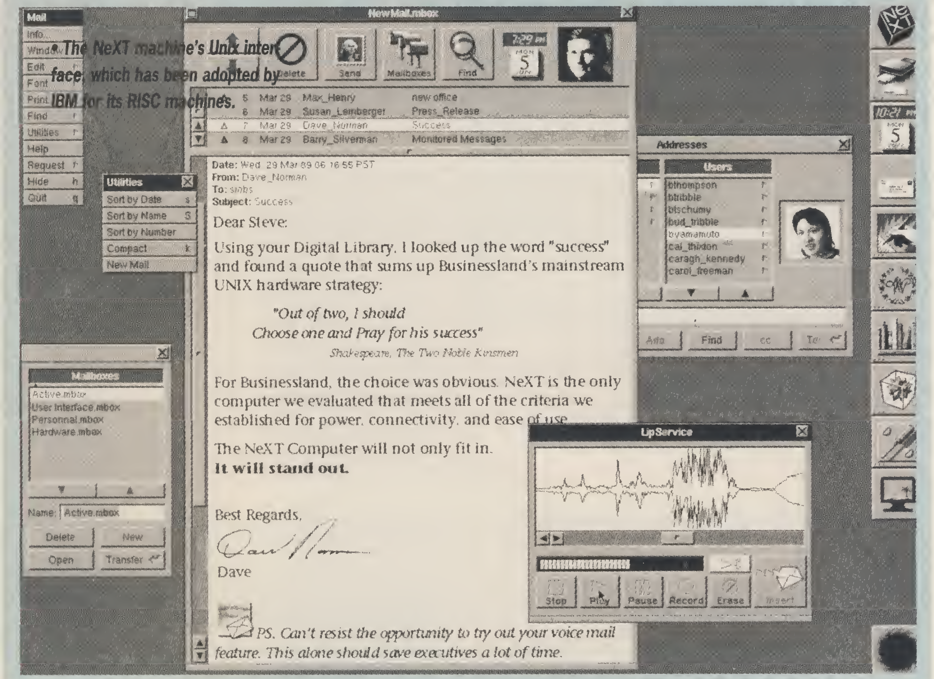
The end result will be a desktop computer which offers full-duplex, real-time sound and video, together with 'local' response times to data on remote databases.

While this is going on, LANs will increase in potency until they offer true gigabit performance, allowing computer to computer communication of huge quantities of data in real time. This will allow the use of genuinely distributed data and processing power across a network, while the telephone (videophone?) will cease to be a separate instrument as will the office television and video recorder.

One of the effects of the increased facilities offered through the communications networks will be businesses' increasing reliance on comms. Already, those companies which use private electronic mail services are hooked – adding more function will only increase the dependence. A result of this will be that more and more businesses will only be prepared to deal with companies which can telecommunicate with them. This has already been seen in the motor industry where EDI (electronic data interchange) is a contractual obligation placed on all suppliers and sub-contractors by many of the large manufacturers – it will spread dramatically. Companies will not only benefit from business-to-business communications - more and more services will be available to individuals, following in the wake of today's home banking pilot schemes.

Cellular data communications will also take off in a big way – particularly in Europe, where a pan-European cellular network will be on-stream well before the end of the '90s. As prices drop and error-correcting techniques become more sophisticated, it will become practical for portable computers to be permanently on-line to a remote system. This will be a boon to anyone who travels in their job.

USER INTERFACES



• The NeXT machine's Unix interface, which has been adopted by IBM for its RISC machines.

5 Mar 29 Max_Henry new office
6 Mar 29 Susan_Lemberger Press_Release
7 Mar 29 Dave_Norman Success
8 Mar 29 Barry_Silverman Monitored Messages

Date: Wed 29 Mar 89 06 16 55 PST
From: Dave_Norman
To: sjobs
Subject: Success

Dear Steve:

Using your Digital Library, I looked up the word "success" and found a quote that sums up Businessland's mainstream UNIX hardware strategy:

"Out of two, I should
Choose one and Pray for his success"
Shakespeare, The Two Noble Kinsmen

For Businessland, the choice was obvious. NeXT is the only computer we evaluated that meets all of the criteria we established for power, connectivity, and ease of use.

The NeXT Computer will not only fit in.
It will stand out.

Best Regards,

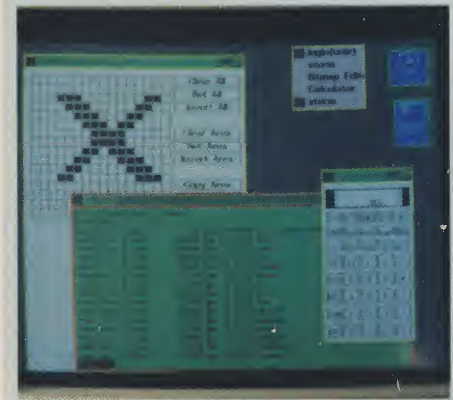
Dave

PS. Can't resist the opportunity to try out your voice mail feature. This alone should save executives a lot of time.

It seems as if the Graphical User Interface (GUI) is here to stay. We've got Microsoft Windows, OS/2's Presentation Manager and the Macintosh operating system, together with AmigaDOS and GEM, not to mention a whole host of competing 'standards' in the Unix market. All in all, every contender for the '90s workstation market has at least one GUI – it looks like the next generation of desktop computer users will have an embarrassment of choice. The question is: which one will become dominant?

Over a period of time, users will insist on having a common interface no matter whether they are using a Macintosh, a Unix workstation, a PC or a NeXT. This will free them from dependence on one particular family of computers, letting each individual in an organisation have the machine which suits their individual needs while allowing them to move from machine to machine without having to learn all the keystrokes again. So, one interface must become a true standard.

IBM kick-started this search for a single standard with the 1987 announcement of Systems Application Architecture (SAA) which – among other things – defines a consistent user interface over all the IBM 'commercial' computers from the PC to the System/370 mainframes. Both Windows 3 and Presentation Manager conform to these standards, and since the desktop computer will be used as the 'window' on to larger machines, they are the ones that count. Since Windows and Presentation Manager are getting increasingly alike (the next releases of the two products will be identical, to all intents and purposes) they can be seen as one interface.



• *X-Windows on an Acorn: becoming another Unix standard.*

The massive installed base of IBM equipment means that the majority of big businesses and hence big spenders will be using SAA-compliant software for at least the next few years. This, in turn, will encourage software houses to write to the standard, strengthening its position. For as there is more software, users will find it increasingly attractive to embrace the standard which encourages more software houses to write... and so on. Since people tend to dislike revolution, the evolutionary attractions of SAA and Windows-PM, a version of which will run on the majority of currently-installed small computers, makes them look like winners.

All the world is not coloured blue, however, and there are some other GUIs which may make it big. One of the most likely (despite very few users at the moment) is Steve Jobs' NeXTstep. Ironically, it is IBM, which offers NeXTstep with its RS/6000 range of Unix boxes, that has given NeXTstep its chance. Since one of the more complete of the Unix 'front ends', the backing of Big Blue cannot hurt its chances. However, the likelihood is that an interface which comes from the Unix world will not have the momentum to dominate the entire desktop market. In all probability, however, NeXTstep – like all the other GUIs, will slowly adapt until it shares common ground with SAA. Sorry Amiga and ST owners, but despite the high business sales of the Amiga in Germany and the ST in Denmark neither has the power in the business community to assert AmigaDOS or GEM as the overriding standard.

This does not mean that all our machines will be running Windows clones in a decade. There are many elements of the other GUIs which are better than the Microsoft offering (the Macintosh's graphical representation of file handling, for example) and these should end up being absorbed into the ultimate standard via cross-licensing deals and the like. As a transitional phase, we can expect computers to come with an operating system which can be configured to emulate any of the leading front ends.

The user interface is not just about what appears on screen, of course – see the sections on sound and input for more.

DATA STORAGE

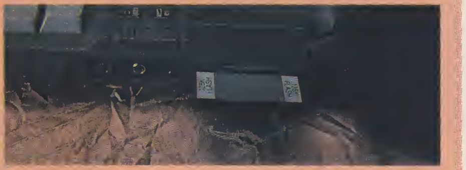
• *CD-ROM: medium of the future or another 8-track?*

As always, the tendency is towards more and more storage occupying a smaller and smaller physical space. As memory prices drop, 20 or 30Mb RAM 'disks' will become common. These will be used for special high-speed applications, and also as massive caches for more conventional storage (if you're manipulating large image files a cache has to be seriously large in order to show real performance).

Conventional storage will move inexorably from the magnetic to the optical. Optical storage has the twin advantages of low cost and high resilience, unlike floppy disks and tape which can be destroyed by a small magnetic field. The search once again is for a standard. CD-ROM is establishing a foothold now, but it has the major problem of being read-only. Only time will tell which of the read-write formats will be dominant, although a drive which can read CD-ROMs as well as read/write disks will offer certain advantages. On the other hand, those products which are now beginning to be distributed on CD-ROM may well shift to the new read/write media, leaving CD-ROM for the home market, with descendants of Commodore's CDTV. Or CD-ROM may go the way of 8-track stereo...

Credit-card sized data storage will also increase in capacity, making pocket-sized computers like the Atari Portfolio and the Poqet PC able to run increasingly sophisticated programs. Expect cards to be holding several megabytes within a few years.

Controlling all this is likely to be a SCSI port, despite claims of technical superiority for the rival ESDI standard. Like Topsy, SCSI has just growed and growed.



• *Data cards storing megabytes will become common.*

INPUT

In *2001* – the movie – voice is used as the key data-entry tool. In 2001 – the year – the keyboard is still likely to be dominant. This is partly inertia again, but partly the fact that making a speech recognition system that you can actually talk to in a normal way is a fiendishly difficult task (see Sound).

On the other hand, certain other ways of getting information into a PC will flourish. Dominant among these will be handwriting. This will be used in two ways – character recognition of scanned, handwritten documents and actually writing with a stylus on to a pressure sensitive pad. Both technologies are currently possible but still considered fringe applications. However, increasing processor power will allow considerably more complex algorithms to operate in real-time, making handwriting recognition practical for ordinary users. Pressure sensitive pads will be particularly useful on the smallest portable computers, where the difficulty of typing on a miniscule keyboard (or learning an idiosyncratic Microwriter-type approach) will be removed. These pads will also come in useful in various new applications, for signature validation, for example – no more will you have to remember a four-digit cashpoint code, just sign on the pad.

The growth of the GUI has been a boon for the mouse. However, this takes up quite a lot of desk space and has a tendency to wear out. Touch sensitive screens – a combination of the pressure-sensitive pad and a conventional display – will become common.

The spoken voice will be used in some cases, although for some time this will be restricted to a specific vocabulary – "go", "stop" and so on. This will be particularly common in specialised applications – for the physically handicapped, for example.

MAINFRAMES

The mainframe may well die, but it will take a very long time to do so – and even then it might simply be replaced with a microcomputer which is really a mainframe in a different, smaller box.

So many companies have so many mission-critical processes running on mainframes that a wholesale move to distributed smaller computers is unlikely to happen for many years. What will happen is that new functions will be performed by small computers while the mainframe continues to chomp away at the payroll and stock control. Indeed some companies which have huge, monolithic applications which are critical to the survival of their businesses will continue to use centralised systems for the forseeable future.

For example, the reservation system in the case of the airlines is unlikely to be distributed to smaller machines. While this may seem to be missing out on the benefits of the latest technology it can be sound management practice, allowing central management to retain ultimate control.

Over time, the role of the mainframe will change subtly, becoming increasingly that of the data and computing server in a 'client-server' network. The desktop computer will provide a front-end program which the user sees, but it will get the mainframe to perform particularly onerous tasks, such as manipulating vast databases or performing particularly abstruse calculations.

Finally, there will be enough raw power on the desktop for the mainframe to become an irrelevance, with a co-operative network existing between desktop machines.

But that's a long way off yet.

DATA ACCESS

The growth of high-speed communications and the availability of low-cost high-capacity storage will provide the ability for computer users to have access to massive quantities of data.

At its simplest level, this means that the big databanks of the world will become more available. All the daily newspapers may be accessed by telephone, for example, as might the main reference books. Businesses will be able to look at freshly-updated versions of everything from the telephone directory to *Who's Who*. The opportunities for abusing the system are fairly clear, and communications security will become a highly lucrative career to follow.

The ability to pass real-time video across a wide area network opens up the possibility of large, centralised libraries of images and sounds. The leisure opportunities are obvious – dialling up the video library to see tonight's movie, for example – but there are also business applications.

Surgeons will be able to call up 'film' of rarely-performed operations, to run beside them as they work, with hypermedia front ends allowing them to get precisely the information they require.

SOUND

Often simply lumped into the 'multimedia' bracket, sound has far more potential than may at first appear. The first stage is for the majority of business computers to have the capability to reproduce high-quality sound signals, something which will happen within the next couple of years. This is tied to some extent with the proliferation of large optical storage devices.

The ability to communicate this high-definition sound will lead to the computer being able to take over from the telephone and, by using the storage, the answering machine along with the dictating machine).

Next, the computer will develop the capacity to 'speak' and to understand the spoken voice. Speech synthesis is nothing new, but the code to provide really lifelike talking has not yet been developed. Faster processsors, more RAM and large storage will once again provide the kicker for this. Understanding speech is a thornier problem, but it will be resolved in time, once again, due to the greater system resources the computers will have.

Ultimately, as the programs necessary to understand the syntax of everyday speech arrive, users will be able to dictate a letter directly to a computer, discuss a particular issue with an expert system in a natural, chatty way and interrogate databases in the way we'd all love to – by actually asking for something they want.

OUTPUT

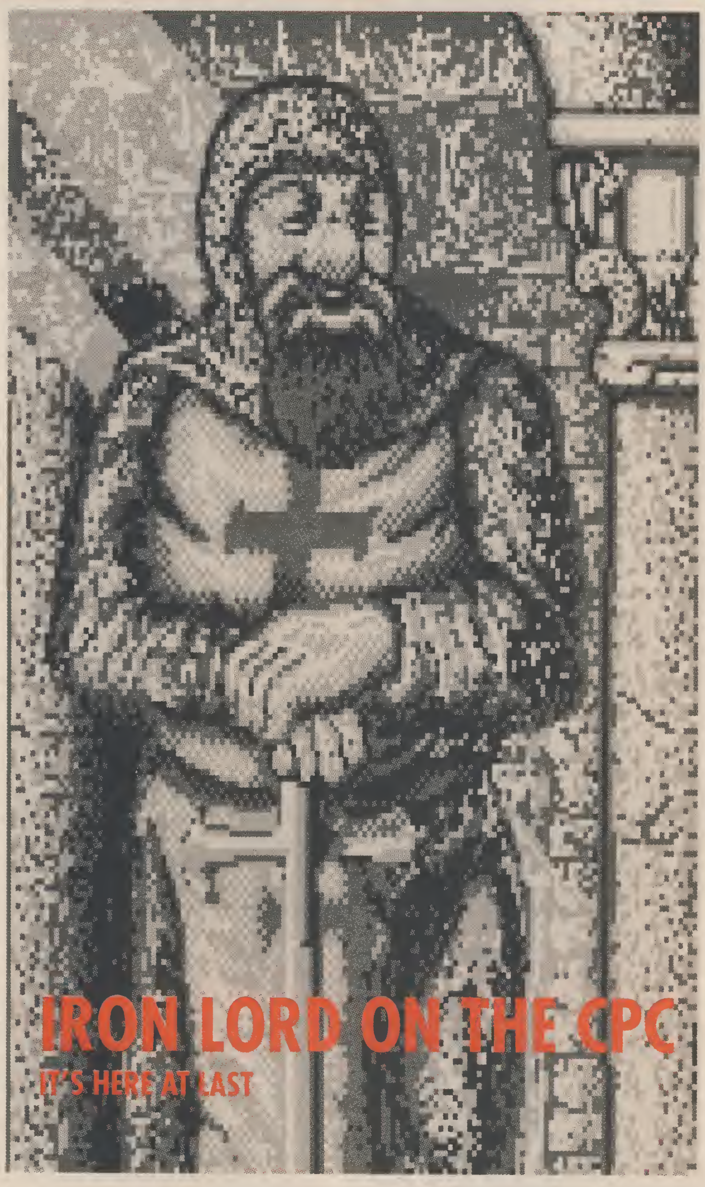
Currently data output is restricted (in most cases) to paper or magnetic disk. This will change somewhat over the next years.

As more computers become able to manipulate real-time sound and video images demand will rise for tools which allow this computer-controlled data to be 'printed' and then distributed. This will initially show itself as (comparatively) low-cost ways of communicating with video cassette recorders.

This is merely a temporary solution, however, and as read/write optical disks become more prevalent they will be used both as storage devices and actually for publishing the data they hold – as the primary distribution medium, replacing paper for many applications.

However predictions of the end of paper are a long way from being realised yet.

IN THE CONSOLE ZONE: POPULOUS REVIEWED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GOLD DISK SLASH PRICES

Gold Disk Inc, the company that brought you the Amiga's premier DTP system, *Professional Page*, has cut the prices of its current range of professional productivity software. As from September 7, several of Gold Disk's products have been reduced in price, making them even better value. The new prices are as follows: *ProPage* 1.3 – £200 (was £250), *PageSetter 2* – £160 (was £200), *Compugraphic Outline Fonts* pack – £130 (was £200). On the subject of Compugraphic outline fonts, Gold Disk has decided to split its current £130 outline font pack into four separate packs that will be sold at a price of £40 each. For more, give HB Marketing a call on 0753 686 000.

PROTECT AND SURVIVE?

How many times have you bought an item of serious software, only to find that it's copy- protected? OK, many will argue that software protection is necessary to protect the software producer's investment, but it's a darn-right pain in the posterior for the rest of us. Within the last couple of weeks, I've been looking at a number of different products, including several new music packages for the Amiga. These include Dr T's *Tiger Cub* and Steinberg's new *Pro-24* sequencer system. Both *Cub* and *Pro-24* are copy-protected, but each uses a different system that proved to be equally annoying.

For starters, *Pro-24* uses the now infamous dongle. OK, dongles are great in theory, as they still allow you to make a back-up of the program disk. But, if you've ever owned a package that uses one of these monstrosities, then you'll know all too well how easy they are to lose. And what happens if you do lose the dongle? You're in big trouble, matey. After all, who can blame the software producer if they won't replace the dongle? How do they know that you don't want the extra dongle for a friend?

Even more annoying is disk protection on serious software. Dr T is infamous for its protection scheme that allows you to both install the program on a hard disk and even make a back-up copy of the program disk. However, everytime you try to load the program, *Tiger Cub* asks you to re-insert the original program disk. If you damage this disk (which is more than likely going by the sounds that the disk drive makes as the protection is checked) then you're going to have to wait a couple of weeks for *Dr T* to send you a replacement, which you have to pay for. If you lose the disk, then hard luck. In the PC market, software protection on serious software is practically a thing of the past.

Many corporate users refuse to buy a package unless they can protect their investment by making multiple back-up copies of a program. Sooner or later, a similar situation is going to arise on the Amiga, thereby forcing producers to remove protection. Already many companies have followed this lead including big names such as EA (*D Paint* was originally copy-protected!) and Passport.

The solution lies in manuals. If these companies were to produce more comprehensive documentation, then many users would buy the package just to own the manuals. *Music-X* is a good case of this. According to MicroIllusions, many musicians who obtained pirated copies went out and bought the full package just for the manual.

SAMPLE CITY

Just when I was starting to think Amiga sound-sampling had been pushed as far as it would go, a company in America has launched a sampler to beat them all. Beta Unlimited has launched its AudioLink 16-bit sampler card, which offers 16-voice polyphony (eight in stereo), fast sample rates and a built in MIDI interface, making it ideal for professional musical applications. The system comes complete with 16-bit sound editing software that offers real time playback (no having to dump samples through MIDI!), cross-fading (for glitch-free samples) and full cut, copy and pasting between voices. No UK release details yet, but I'll keep you informed.

On the subject of new MIDI software, Sound Quest has extended its already impressive library of Amiga music software with a new product called *MIDI Quest*. *MIDI Quest* is a universal editor/librarian that offers configurable MIDI drivers, integrated graphic editing and even built-in sequencing options.

BITCON BOOBOOOOPS.

During my article on SDL's up and coming ATonce PC Emulator card a couple of weeks back, I incorrectly stated that Bitcon's KCS PowerPC card costs £400. In fact, the card is actually £80 cheaper, which makes it considerably better value when you consider that not only is the card a fully fledged 8MHz PC/XT emulator, but it also acts as a RAM expansion. Bitcon also includes a wealth of software to get you going, including MS-DOS 4.01 (which normally costs £80), GW BASIC and Phoenix DOS help (which costs a further £50). For more, give Bitcon a call on 091-490 1919.

DISK SWITCH

So you've got a 512K Amiga, right? Then you decide that you'd like to add a second drive, and what happens? You've no longer got a 512K Amiga and you've lost 30K of your precious memory to your new peripheral! OK, this isn't too much of a problem if you're lucky enough to have upgraded your Amiga to a megabyte or more, but you may find that some programs suddenly stop working if you stick with 512K. The answer then is to unplug your second drive each time you wish to use the offending item of software, but then what's the point in buying the drive in the first place if you can't use the damn thing?

If you're feeling adventurous, there is a solution. All you have to do is to fit a switch to your drive that cuts out the line that informs the Amiga that the drive is present. Here's how. What you'll need is a single-throw switch and a soldering iron. First, unplug the drive (while the power is off, of course!), open up the drive connector and locate pin 21 (which Commodore calls SEL1). Next, cut this wire (leaving enough on each side to connect and switch), and solder in your double pole switch. Finally, mount it in nice and securely somewhere so that it can be accessed once you re-assemble the connector casing. Oh yes, don't forget to turn off your machine each time you flick the switch. If you don't, sparks will fly.

Jason Holborn

Archimedes

SOMETHING FOR NEVERYONE

The week of 'the show' is always an awkward time for news. Most companies with new hardware or software are acting all secretive and not revealing anything until the weekend, so watch this space for all the hot gossip next week! I have, however, managed to get hold of copies of *Nevryon*, *Inertia* and *The Real McCoy* from 4th Dimension, so I might as well give you the low down on these. I was quite impressed with *Nevryon* to start with, it seemed to have all the qualities of a brilliant shoot-'em-up. Nice n' big colourful graphics, excellent sound effects and a number of catchy tunes. However after about half an hour the novelty did begin to wear off. I completed wave- 1 with no problem but couldn't get anywhere at all with the second set of angry aliens. Passwords are only given for every other screen so I couldn't even skip to the later levels. The disk was accessed far too often, in between levels was understandable for loading new graphics, but at the end of the game and between setting options? Hmmm, I must say I was getting a little annoyed at the wait.

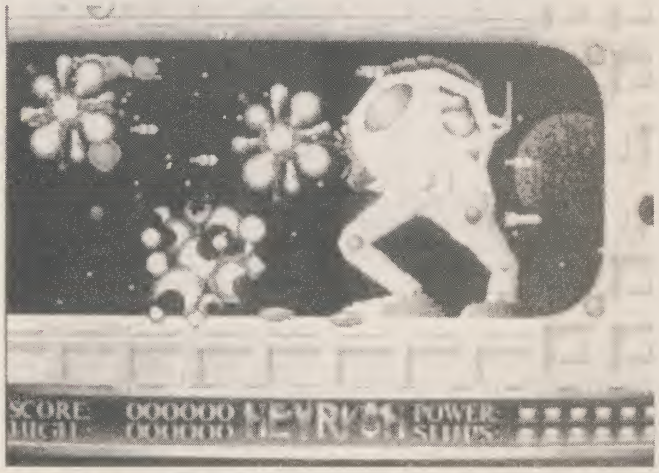
This, coupled with the long loading sequence and no keyboard short cuts for setting options and even starting the game (you have to point and click with the mouse on Start Game), made the game rather an effort to play. Despite this, the game play is excellent, it falls well and truly into the 'if it moves shoot it, if it doesn't move shoot it anyway' category. The number of additions you can make to your ship make it look like something even Arnie would be happy with. Connecting your Archie to a hi-fi is almost compulsory to hear all the music.By loading one of the numerous BASIC programs on the disks and finding the passwords, I was eventually able to see all eight levels. Some are good, some are merely OK, but basically it's all the same sort of thing just much, much harder! So much so that I set about the game and provided myself with an infinite energy poke; simply load the game and type. Hmmm, no. Maybe some other time! My final comment would be, 'shows promise'.

I still think that most Archie games have an awful long way to go to rival their ST and Amiga counterparts. ST *R-Type* still knocks spots of *Nevryon*!

THE REAL MCCOY

This is simply a compilation of *Quazer*, *White Magic*, *Arcade Soccer* and *UIM*. The good bit is that it only costs 30 quid – almost the price of just one of the games! The catch? Well, *Quazer* has been well and truly superceded by *Nevryon*; *White Magic* quite honestly isn't up to much; and *Arcade Soccer*, although good, is simply not on par with *Manchester United*. The only redeeming feature may (or may not be) *UIM*, this *Elite* clone doesn't really show what the Archimedes is capable of, but it is currently the only game akin to its very close relative; there's more to do, but perhaps not enough originality to make the game a classic.

And finally, *Inertia*. The adverts say 'totally original', what was *Marble Madness* then? Basically *Inertia* is a rather poor copy of that excellent arcade game. *Inertia* mainly suffers from jerky scrolling, a confusing isometric view and rather dull game play. Overall a very good BBC game! Watch out for *Drop Ship*, *Chock's Away* (at last a rival for *Interdictor*) and *Break 147* (a 3D snooker simulator) in early October from the 4th ➤



• Nevryon: ***arcade action on the Arc.***

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Dimension In the mean- time get busy with *PipeMania*, my current fave game (despite the bug!).

FIRST AMONG EQUALS

I'm currently awaiting the arrival of the two newies from Computer Concepts; *Impression II* and *Equasor*. With any luck *Impression II* should clear up the various criticisms of version 1, anyway if you're a registered user you'll be sent the upgrade free of charge. My only real complaint is the dongle – not that you have to have one but that you have to move your machine four inches away from the wall! *Equasor* is a tool for typesetting mathematics.

An Arc version, *TeX* ,has been available for a number of months from Tools in Belgium. This is the perhaps the ultimate in typesetting. It uses a script file for generating the final output rather than the WYSIWYG affair of *Impression*, *ADTP* and *Ovation*. This means that you can precisely specify your document, but can't easily see your changes.

Why am I telling you all this? Well, *TeX* was the original program that featured mathematical typesetting. Unfortunately there is no way of exporting the maths bits into a more 'Archimedes' form, e.g. *DTP* or *Draw file*. *TeX* is all very well, but it's a bit of a purist's program, I hope *Equasor* brings maths typesetting to the masses. If in doubt, read the manual!

ANSWERS

The answer to last week's fiendish poser (what/where is the missing key?) can now be revealed! Buried in the depths of the new *Programmer's Reference Manual* is the solution to this most taxing of problems. On page 477, its says that key 77, for that is its number, is present on some European keyboards. I presume it is therefore some sort of extra shifting key, or maybe an accent key. The *PRM* does not, unfortunately, divulge anything else.This week's amazing fact appears courtesy of the Debugger module. Whilst browsing through the various bits of code in *Nevryon* searching for the infinite energy poke, I discovered an exceedingly annoying 'feature' in the disassembler. Whenever it discovers a PC relative memory reference, e.g. `LDR R0, [PC,#128]`, it adds a comment telling you the actual memory address referenced (by taking the PC, adding the offset and taking pipelining into consideration). Unfortunately this final address is always rounded down to the nearest word boundary before printing! In other words it display the wrong address when disassembling the instruction `LDRB`.

Ken Coumarin

PC

IRON LORD

Good grief, it's taken its time – but *Iron Lord* has made it to the CPC at last. Well, nearly, anyway. The version I managed to get my sticky maulers on happened to be a French one, but using my huge knowledge (!) of the French language I managed to bungle through.

And after a few hours of play I have to say it really is rather good. The plot is nothing original, admittedly. You, as the Iron Lord in question, must sally forth from your ruined castle, build an army out of those noble people you meet on your travels and then lead them against your land's evil despot of a ruler.

Actually, the whole thing bears more than a passing resemblance to the Robin Hood saga. You're the equivalent of King Richard, just back from the crusades, and you've got to depose nasty, evil, vicious etc Zolphar. He's the king's brother by the way, and has been ruling the land with a rod of iron – and intends to carry on, even though you're the rightful heir to the throne.

Where *Iron Lord* really scores is not in its plot, which is pretty standard stuff, but in its graphics and attention to detail. It's like a cross between an adventure with graphics and an arcade game. The land you're exploring consists of a series of locations depicted in very atmospheric and stylish sepia tones. Along the way you'll meet various characters who will either be friendly or not so friendly, and it's partly how you interact with these that will determine your success or failure. Beyond this, though, there are many sub-games in which you can improve your reputation and standing – an archery competition in one of the villages, for example. Alternatively, there's arm-wrestling and dice-throwing in the local tavern if you fancy a bit of indoor entertainment.

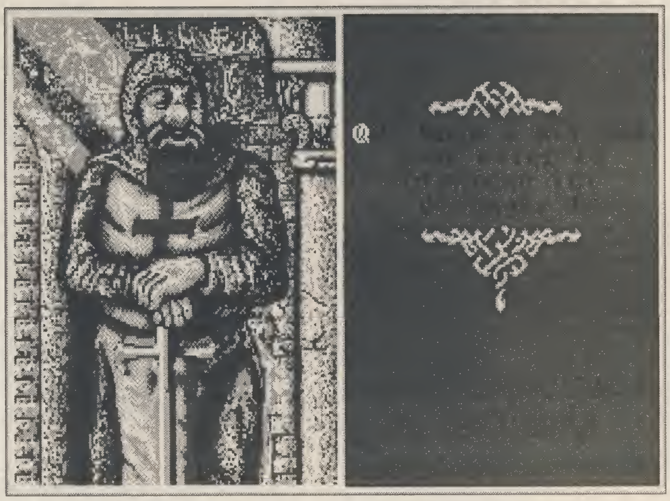
Once you've assembled your army, *Iron Lord* changes into a tactical wargame as you try to defeat Zolphar's forces. It's not really complex enough to form a game in its own right, but it adds yet another dimension to an already impressive game.

Finally, with Zolphar's armies routed, you get to chase after the tyrant himself in a six-level labyrinth populated by acid-spitting dragons in an arcade section.

Sounds like a lot of game, doesn't it? Well it is – two disks' worth to be precise. Hence the price of £19.99. Still, providing you enjoy that good old sword-and-sorcery genre, you're getting pretty good value for money.

SIREN'S BLAST

Well it didn't take long for the peripherals manufacturers to latch onto the new Amstrads. Siren Software is about the first company to launch a product which will work on the GX4000 and Pluses as well as existing CPCs. The Soundblaster plugs into any of these machines to provide a stereo boosted output via its twin speakers. Hi-fi freaks will be interested to learn that the speakers are five-watt three-unit



• **Iron Lord** *on the CPC at last!*

efforts with a frequency response of 100Hz to 20KHz. Price is £52.99, and for that you also get a power supply and free stereo headphones.

Call Siren on 061 – 228 1831 for more information.

CHARTING PROGRESS

What's the top-selling full-price CPC game this month? Which budget game has sold most copies? This information and more can be found out from the Gallup charts now appearing in *Express*'s sister mag *Amstrad Action*. That's right – from now on that worthy organ will be publishing the latest, updated Gallup games charts every month. Don't miss it!

ADVENTUROUS NEWS

Just to prove I haven't forgotten all you adventurers out there, here's a snippet from Scull PD Library.

For the princely sum of £1 and the provision of an empty disk and SAE, Scull PD will send you a whole 348K of adventures. These include:

- *Raider*, an "interactive" role-playing game.
- *Blue Raider*, an adventure in two parts.
- *Can I Cheat Death?*, a game described as an 'adult adventure' (*and that's enough of that – ed*).
- *Adult Two*, the follow-up to the above.
- *Doomlords*, a three-parter.
- *Firestone* (don't know much about this one).
- *Spacy* (nor this).
- *Welladay* (OK, you guessed).

If you want to take advantage of this excellent offer, send your blank disk, SAE and £1 to Alan Scully at Scull PD Library, 119 Laurel Drive, East Kilbride, Glasgow G75 9JG.

ROBOCOP II EXCLUSIVE!

Our secret source (actually Matt Beilby, from sister mag *Your Sinclair*) was up at Ocean's HQ the other week on some dull Speccy business or other, and just happened to see *Robocop 2* running on a console. "It looked well wicked," enthused Matt, "quite different to the first one – more of a game – lots going on all the time, just like a Japanese arcade!"

Meanwhile, we wait with bated breath for our review copy. Could this be the best console game yet? Yes, well, OK – we have only seen two so far.

PIPE MANIA POKE

Graham Smith has come up with an incredibly useful poke for this plumbing epic, one which slows down the countdown. Make sure you save the poke to disk and then run it from there.

Rod Lawton

```
1 ' Pipe Mania!! -disc-
2 ' By Graham Smith
3' Slows countdown
4 '
10 DATA 21,e4,07,22,e5,c7,c3
20 DATA d0,c7,e5,21,f9,25,36
30 DATA cd,23,36,f4,23,36,07
40 DATA e1,c3,68,bc,dc,ec,25
50 DATA 3a,ff,25,ee,8a,32,ff
60 DATA 25,c9,0,2,13,15,11,20
70 DATA 24,3,6,16,22,18,4,8
80 DATA 26,9:MODE 1
90 FOR j=0 TO 36:READ a$
100 x=VAL("&"+a$):y=y+x
110 POKE j+2011,x:NEXT j
120 IF y<>5042 GOTO 200
130 OPENOUT"d":MEMORY 2000
140 PRINT"Insert game disc ";
150 PRINT"then press any key"
160 CALL &BB18:MODE 0
170 FOR j=0 TO 15:READ x
180 INK j,x:NEXT j
190 LOAD"screen.scr":CALL 2011
200 PRINT"data error
```

• *That* PipeMania *poke in full.*

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C64

GREG NORMAN'S ULTIMATE GOLF

Another golf game is tempting you onto the green for the first time since *Leaderboard* brought out the bad-taste trousers in everybody over four years ago. This time it's *Greg Norman's Ultimate Golf*, as the packager, Gremlin, would have you believe. Comparisons, as we all know, are odious, so we'll leave *UG*'s predecessor out of the argument and consider this one on its own merits.

What you get for your 20 or 15 quid (extortionate disk and cassette prices quoted respectively), are two 18-round courses and a choice of playing with up to four other swingers (any of whom may be computer controlled). Options there are aplenty. You leave the dirtiest work for the computer to deal with, until you're au-fait with hook, swing, over- and back-spin and the rest of it. Of course, you can plunge straight in there and take on the ravages of weather, wind et al, but it's nice to see some mercy has been shown by the programmers. A 'caddy' option even chooses your clubs for you.

The options are selected from a pull-down menu which will even illustrate the stance a player takes for a particular shot. Naturally, embarrassing details such as your par are constantly highlighted to remind you why you're playing on computer and not taking in the fresh air (fresh air with golf balls flying through it). A feature never included in *Leaderboard* (sorry, it had to happen), but thoughtfully included here, is one which allows you to view your badly dressed player from a number of angles, giving you some idea of what a ridiculous shot you're about to attempt (especially useful for the bunker-burghers among us).

That's it really. You're guided through essentially complex play by a friendly system, and left to get on with it. Total beginners and complete experts alike should find plenty to keep them occupied. Unfortunately, one of the less attractive reasons why you'll be kept occupied is the amount of time it takes for the program to redraw a screen. It has to do this, not only every time, you select a new view or move to a new location, but every time a menu over-writes part of the main display. This happens a lot. Still, golf is a slow game.

Sound effects are strictly of the 'whoosh and whumph' variety, but what else can you expect? The graphics, for all their lack of speed, are sublime. Especially well animated is your golfer character (this helps you feel much better when you're 11 over par – at least he looks like he's playing well). Bloody good game with slightly flawed graphics and a seriously flawed price.

USER GROUP

Readers interested in getting to know their machine more intimately should take note of the erudite Independent Commodore Product User Group (ICPUG), a well organised and informed outfit who might be described as the last word in PD, shareware and technical expertise, judging by literature received from it recently. It has specialists for any Commie machine you can think of (including 2/3/4/8000 Series PET!). £17 buys you a year's membership if you're a UK resident, but it can also cope with overseas surface and airmail. An SAE to Jack Cohen, Membership Secretary, ICPUG, PO Box 1309, London N3 2UT should elicit further details.

CES

Some serious chasing of rumoured C64GS software needs to be done at the CES show. I hope to have some interesting news of releases next week.

Sean Masterson

PC

CHECK IT OUT

This week in our build-your-own-system-files series we come to what I regard as being an essential part of any `autoexec.bat` file: CHKDSK.

Now this is not strictly an essential command to include, but I find it vastly useful as it alerts you to anything going wrong with the system and forces you into a little bit of (hopefully preventative) disk maintenance.

CHKDSK looks at the disk and at the file allocation table (FAT) and sees if they match. If not it fixes the problem. The FAT is a file on the disk where MS-DOS keeps a list of all the documents, and exactly where they are physically on the disk. Now when the computer is working properly MS-DOS opens a file when asked to by a program, then writes the data to it, and finally closes it and updates the FAT so it can find it again. Should your machine crash while a file is open (what do you mean it never happens to you?) then there's a good chance that the FAT wasn't up to date and the file will be lost.

This is clearly disaster city, but it gets worse. Often DOS had partially updated the FAT so it knows that certain parts of the disk contain data and are therefore off limits, but it doesn't know what file they belong to. Thus parts of your disk simply disappear – DOS won't write data to them and since they are not part of a file they don't appear in directories and can't be deleted. Enter CHKDSK.

CHKDSK searches for these bits of no-man's-land and turns them into files so they can be dealt with.

I always include it in the `autoexec.bat` file because that's exactly when you'll need it – rebooting after a systems crash – and because I like the reassurance of the check first thing in the morning. Additionaly CHKDSK tells you how much hard disk space is free, so you know to do something about a clogged hard drive, and gives you a 'memory free' check, which can help in diagnosing why certain programs won't run.

Include the following line in the `autoexec.bat` file after the PATH statement (CHKDSK is an external command so DOS needs to know where to look for it on the disk):

```
    CHKDSK /f
```

The f parameter tells CHKDSK to fix (f) any faults it finds – otherwise it will tell you something is wrong, but do nothing about it.

If it finds anything wrong it will display a message something like:

```
    12 lost clusters found in
3 chains
    Convert chains to
files?(y/n)
```

Answer yes and you will find some new files on your disk with strange numerical file names with the suffix .CHK. These are the parts of the hard disk which had become detached from the real world. If you have lost data in the crash it's worth checking the contents of these files, but don't get too hopeful. Otherwise, delete them and free up the space on your hard drive.

More on the system files next week.

IF YOU'VE GOT IT SUSSED

If you are already an expert at playing with `config.sys` and `autoexec.bat` you probably became so the same way as I did; having a number of different applications with different requirements that required a lot of tweaking of system files to get them to work properly.

The trouble is, once you've found the ideal setup for one program, the same settings will completely screw up another. The answer is to have several different sets of files and to rename the appropriate ones to `autoexec.bat` and `config.sys` and then reboot the computer.

This is, to say the least, a pain. It is possible to write a batch file which takes a lot of the effort out of it, but it is still not an elegant solution.

Reboot from The Ctrl Alt Deli is a program which tries to make life a bit easier. Once set up, you simply type 'reboot' followed by a keyword. The keyword specifies which particular setup you require and the program changes the appropriate filenames and reboots the computer.

Reboot has a built-in text editor to actually create the files, and if you can't remember the setup's name there is a menu driven option which gives a brief explanation for each one.

All in all *Reboot* is a handy program to have around, although the determined DIYer could set up the same sort of thing with a batch file and either a PD warm boot program or a few lines of assembler. If that sounds appalling give *Reboot* a look.

Reboot costs £29.95 from The Ctrl Alt Deli on 0908 662759.

COMPETITION FOR WINDOWS

News from the States of yet another graphical user interface (GUI) for the PC.

This one offers an intuitive mouse-driven system and allows you to multi-task programs. Nothing new there, but this GUI – called *GEOS* – claims to be able to run perfectly happily in a 640K XT. *Windows 3* will run on such a machine, but painfully slowly and you can forget multi-tasking.

The system is based on an existing Unix GUI – OSF/Motif – and several big US developers are rumoured to be looking closely at it, including Lotus.

More when I hear it.

MORE LI'L UNS

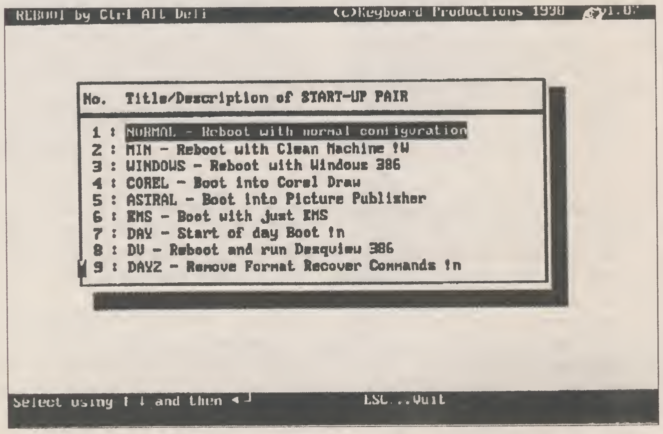
Hard on the heels of the ultra-small Sharp laptop we covered a couple of weeks back comes another machine with virtually the same spec -12MHz AT with hard drive and VGA screen – in a package small and light enough to be comfortably held in one hand without a handle.

In fact the appearance and specifications of the machines are such that you have to suspect that they rolled off the same production line. The NEC Ultralite 286V costs $3,999 in the States with no news of UK availability yet.

BROKEN PROMISE

Getting the new-look magazine done for the last fortnight has forced me to postpone my look at *MemoryMate* from Domark, but never fear, it will appear next week. Another one for next week is the latest breed of mouse; the Mouse Systems PC Mouse III.

Stuart Anderton



```
REBOOT by Ctrl Alt Deli                 (c)Keyboard Productions 1990   v1.0

        No.  Title/Description of START-UP PAIR

         1 : NORMAL - Reboot with normal configuration
         2 : MIN - Reboot with Clean Machine !W
         3 : WINDOWS - Reboot with Windows 386
         4 : COREL - Boot into Corel Draw
         5 : ASTRAL - Boot into Picture Publisher
         6 : EMS - Boot with just EMS
         7 : DAY - Start of day Boot !n
         8 : DV - Reboot and run Desqview 386
         9 : DAYZ - Remove Format Recover Commands !n

Select using ↑ ↓ and then ◄┘                 ESC ..Quit
```

• *Reboot gives you control over your config.sys.*

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Spectrum

AN OUTLET FOR TALENT

I've just slapped the latest issue of the electronic Speccy magazine *Outlet* in my Plus 3 and can confirm it's another corking compendium of utilities, games, letters, news and comment, all professionally put together and oozing large amounts of Speccy using mateyness. As usual there's a wide variety of things to load in from the on-screen menu, including a circle drawing routine, some clip-art, passable *Arkanoid* and *Operation Wolf* clones, an interesting calculating program and the symphonies of JS Bach in glorious 128K three channel sound, to name but quite a lot of them. Your first issue of *Outlet* can be had on tape, Microdrive cartridge and Opus, Disciple, Plus D or Plus 3 disk, for just £2.50. An impressive SAM version is also available on tape and disk. The address is Chezron Software, 605 Loughborough Road, Birstall, Leicester LE4 4NJ.

GAZZA!

Public domain software for the Speccy used to be as rare as, well, something very rare indeed. Now however, it's about as common as the word 'Gazza' in British newspapers. I've just received the latest list of PD from The Speccy Sector library and it's swelled to a rippling 125 programs! Head librarian Owen Brown tells me this will expand rapidly as he's currently engaged in a program exchange with the Plus 3UG. It's good to see fellow PD purveyors getting together to share their wares and if you want to see what's in the public domain for the Spectrum I suggest you send an SAE for a list of the stuff to: The Speccy Sector, 1 Roxwell road, Chelmsford, Essex CM1 2LY. Oh yes, Owen apologises to anyone waiting to hear from him but he's been on a long, exotic holiday, the lucky so and so.

MORE FROM SAM

The keen eyed amongst you will notice that the SAM part of the column has finished, popped its clogs, bought the farm and left the building. This doesn't mean that I won't be mentioning the Coupé ever again however as it's a close relation of the Spectrum and lots of you have one of the blue footed things next to your Speccy. Let me know either way whether you want to read about SAM.

Anyway, Enigma Variations has a brace of SAM software to follow up its first release, *Defenders Of Earth*. *Mind Games 1* is its new release and will consist of four games, "that require the use of logical thinking and not just a fast trigger-finger." The proposed price is £11.99 and *Mind Games 1* will be available soon from all SAM stockists, or direct from Enigma at 13 North Park Road, Harrogate HG1 5PD.

Sounding slightly more promising however is SAM's first adventure which will be based on Enid Blyton's Famous Five. Break out the ginger beer and prepare for a wizard jape on Uncle Tarquin's mysterious island when the game comes out in a few months. Also in the pipeline somewhere are a future sports simulation, an arcade adventure starring that lovable (?) SAM robot character and a shoot-'em-up-with "three level parallax scrolling", whatever that is.

POKE IN THE DARK

I must be a bit out of touch with what's going 'down' on the software scene because I'm always receiving pokes for games I haven't even heard of, let alone played. If you have heard of, purchased and keep getting killed in something called *Prison Riot* you'll doubtless be pleased to see the following poke that's been supplied by our very good buddy Miktor. We remain forever in his debt. Thanks also to Stuart Innes of Caithness whose hack for the same game arrived shortly after Miktor's. To operate simply 1) Type in the listing at the bottom of the page, 2) Save if you think you'll need it more than once, and 3) Start your game tape from the start.

Now here are two games I have played and been killed in. You'll need a Multiface style interface to make use of the hacks which were rushed to me by a mysterious *Prisoner Cell Block H* fan from Manchester called The Pokemaster. Don't any of these hacking types have normal names?

Dan Dare 2:

```
54390,0 Lives
60677,0 Time
```

Zythum:

```
51271,0  Infinite light bulbs
54783,183 Infinite lives
56478,183 Infinite time
```

SOFTWARE PLEASE

One thing that's always welcome around these parts is software. Especially when I don't have to pay for it. I'm keen to receive and review Speccy software of all varieties from blockbusting mega-games to the latest BASIC Character Set designer, so if your company, big or small, has produced something that Spectrum owners would benefit from being told about you might as well send a copy to Robin Alway at 30 Monmouth Street, Bath BA1 2AP. Thanks.

Robin Alway

```
10 REM PRISON RIOT (48K + 128K) INFINITE AMMO + ENERGY
20 CLEAR 5E4: LOAD ""CODE
30 IF PEEK 23296 THEN LET A=65262: POKE A,226: POKE
A+1,33: LET X=147: GO TO 50
40 LET A=65215:
45 POKE A,234: POKE A+1,89: LET X=81
50 FOR N=23440 TO 23446: READ A: POKE N,A: NEXT N:
RANDOMIZE USR 65024
60 DATA 175,50,X,138,195,1,132
```

• Poke away at Prison Riot.

ST

ATARI COMES CLEAN

A year after its launch, the STE is still proving to be something of a thorn in Atari's side. The latest embarrassing revelation, that there is a fault in the enhanced ST's DMA port that can result in hard disk data becoming corrupted, has done nothing for its chances of being taken seriously as a business/serious/productivity machine.

What happens is that after three or four hours of usage, data can become corrupt if you're running some third-party disk drives or, according to some reports, the Atari SH204/205 drives.

All faulty machines are being modified free of charge, and if you have an STE and either own a hard drive or expect that you may at some stage buy one, you should contact the dealer from whom you bought it for more information about how to return it.

The fault is not new, for I recall Andy Quayle of the GFA User Group experiencing problems with a Supra FD10 drive back in May, but Atari is so far resisting pressure to modify STEs before they are sold.

One victim was the ST Club, as recounted in the latest issue of its ever-improving newsletter, in which hirsute editor, Paul Glover, interestingly and exclusively reveals that a confidential report went out to dealers back in June. It is understood that a warning will at some stage be placed in the STE manual.

I recall Alan Sugar's reaction some years back, when their PC contemptibles were reported to overheat. While strenuously denying the allegation, Amstrad immediately organised the insertion of a fan. "If people want bloody useless fans in their machines," was Sugar's reaction, "they can bloody well have them."

Perhaps the frustration was forgivable, but at least the action was instant. That is how a computer manufacturer behaves if it wishes its hardware to be perceived as a business machine.

HARD NEWS

Better news on the hard drive front from Atari is the announcement of *Atari Archive*, a back-up facility that condenses data by about 50 per cent and also recognises and ignores unamended files, further reducing the need for backing-up. Price not yet announced: more information from Atari on 0753 33344.

FASTER THAN A SPEEDING BULLET

The ST Club reports that German hardware company Pro-VME has developed a 25MHz 68030 accelerator board for the Mega ST, which is faster than the original specification for the now-beefed up (but still scarce) TT!

GERMAN INVASION

Readers of *Express* will already be aware that Germany's position as the world centre of serious ST software has recently been reaffirmed by the latest – and biggest ever – Dusseldorf Atari Messe.

Stand by then for yet another wave in the German invasion. This time it's the highly regarded *Adimens* relational database, which uses a very attractive and user friendly graphical approach.

The UK rights to the package, which claims to have over 30,000 users around the world, have been acquired by Kuma and we are told to expect its arrival, in the guise of version 3, at the beginning of October.

Cost is a substantial but merited £130: contact Kuma on 0734 844335.

WP/DTP NEWS

It's been announced that *Calamus*, the top ST DTP package, is finally to acquire a stand-alone text editor worthy of it.

PKS Write is best thought of as *Calamus* without the page display, graphics and pretty fonts. Blimey! I hear you cry, what does that leave? Well, it enables you to do to text all that you can do within the program itself, including font-sizing and styling, pagination and so on.

The chief benefit is speed, since *PKS Write* doesn't need to perform all the complex paging and spacing tricks that makes *Calamus* so sexy.

At the moment *PKS Write* is available only from Germany on 010 49-6123-7132, though it's likely that UK *Calamus* distributor Signa (0252 341600) will be getting in on the act before too long. And Signa's excellent word-processor *Script* (actually, it's probably better if somewhat pretentiously described as a 'document processor') is about to appear in version 2, though the price had not been fixed at time of going to press. Call Signa for further details on 0252 341600.

The warmly received GEMmed-up upgrade of *Protext*, version 5 (as used at this very moment by yours truly), is currently on sale for £125, but the price goes up to £149 at the end of this month. Place your order with Arnor on 0733 68909 immediately!

As well as selling the excellent *Proxima*, the best value ST DTP program (not as good as *Calamus*, but half the price), Network News Services has now taken on board Mirrorsoft's recently discarded *Fleet Street Publisher* version 3 and is selling it at £185. Of the two I much prefer *Proxima*, but for those who find its dicky *PageStream* ancestry too much to bear, *FSP3* makes a good substitute.

And the aforementioned Proxima has just acquired an additional 32 typefaces described by NNS boss Frank Shean as, "really beautifully-drafted," and "certainly capable of *PostScript* quality." The fonts are spread over four disks, each of which costs £17.25 from NNS on 0375 85910.

ART ATTACK

Where can you get your hands on a fully-featured demo of Electronic Arts' much-talked about £50 *DeluxePaint ST*, lacking only its Save option?

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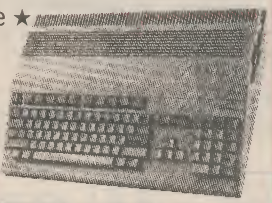

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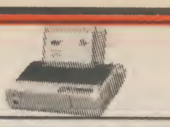

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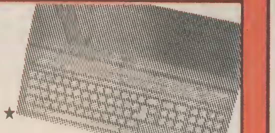

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A Roland CM-32L sound module - your orchestra
Dr T's Tiger Cub sequencer software - your composer
Dr T's Copyist Apprentice software - your scorewriter

and most importantly it includes all the cables required to get the system working and easy instructions on getting started. Package value: £547 rrp. **Package Price: £469 rrp.**

Roland DESK TOP MUSIC SYSTEM

PC-200 MIDI CONTROLLER

A compact 49-note keyboard to suit your computer music setup. Touch-sensitive keys, pitchbend/modulation (vibrato) lever and MIDI control features like 16 transmit channels, 128 program changes and a date entry slider for adjusting volume and stereo imaging. And if you need a few more keys to complete your latest hit, a shift function effectively turns the PC-200 into a six octave keyboard. **Price: £175 rrp.**

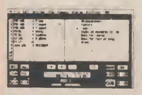
Roland DESK TOP MUSIC SYSTEM

CM-32L - AN ORCHESTRA AT YOUR FINGERTIPS

128 fantastic sounds to choose from, including guitars, pianos, strings, brass, synthesizers and effects plus drums. Using the CM-32L with a sequencer (ie tapeless recorder) like Tiger Cub you can have up to eight different sounds plus drums playing at the same time - it's like having your own personal recording studio. **Price: £369 rrp.**

Roland DESK TOP MUSIC SYSTEM

TIGER CUB/ COPYIST APPRENTICE SOFTWARE



Tiger Cub turns your computer into a recording studio, complete with 12-channel mixing desk, effects routing and editing suite. Simple and logical screens and menus make it easy to use for the complete beginner; powerful control features make it ideal for the professional. Copyist Apprentice lets you print out and edit your music - even down to altering individual drumbeats - and alternative icon screens mean you don't even have to read music. 4 port midi interface. RRP £29.95. Price £178 rrp

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newsagenmts. It's a snip at just £2.95 (free copy of *ST Format*, Britain's best-selling ST magazine, with every copy!).

MIDI COMES HOME

A warm welcome, please, for MIDI Madness, a newly established company set up to offer individual tuition in sampling techniques, sequencing on the ST using the very wonderful *C-Lab* software, and all that (MIDI- produced) jazz.

Call for details on 071-624 1583, or write to MIDI Madness, 77 Compayne Gardens, West Hampstead, London NW6.

By the way, if you missed the recent Olympia British Music Fair, you can always attend 'the other BMF'. The Bristol Music Fair, organised by ABC Music and John Holmes Music, takes place at the rather swanky Watershed Conference & Meeja Centre on Saturday and Sunday November17 – 18.

Hi-tech and instrument suppliers already signed up include Roland, Tascam, Sound Technology, Yamaha and Casio. Call Kim Joseph of ABC Music for further information on 0372 68114.

MAKE A STAND FOR IT!

ST musicians – of whom there are an ever-increasing number – will no doubt be among those who can get their act together with Multiframe, a multi-purpose stand and housing unit that can be assembled in seconds (not by me, I bet).

Other suggested uses include DTP and education. The whole lot, currently 20 different mounts to choose from, is yours for about £100 from Exposure Productions: 021 – 501 2339.

HARLEKIN SOLUTION

"Aargh!" writes Mark Shotton of Newcastle-under-Lyme. And why, pray? "Much as I love *Harlekin*, that wonderful collection of utilities-cum – word processor, there's one annoying thing that's driving me absolutely bats."

"I refer, of course," Mark elaborates, "to the fact that, every time I power up, I have to set the bloomin' date and time. And because of the way it works, I can't see any way round it. Is there?"

Well yes there is actually, Mark, and there's an additional benefit too. Every time you save a file normally it's set for some ridiculous time in the next century – hardly much use! The result is that you can never be sure which is the new version of a file and which the old.

Unless you fit a clock. One such is Frontier's rather rottenly named *Forget-Me-Clock II* which plugs into your ST cartridge port and runs a small auto-run program. Bingo! Every time you turn on, your time and date are automatically set.And *Forget-Me-Clock* is the only ST clock I'm aware of that has a full pass-through, so you can have another cartridge plugged in at the same time.

Forget-Me-Clock II from Frontier Software costs £24.99. Call 0423 567140.

Steve Carey

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The commodore 1084S colour monitor is a limited offer. Phone for availability.

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ST Internal drive upgrade.	£64.99

The Cumana, ST, internal drive requires the ST's case to be modified (full instructions supplied). The external ST drive is slim, quiet and comes complete with integral power supply/data lead. The Amiga drive is slim, quiet and has through port/disable switch. Add £2.50 P&P for drives. ST A/B boot switch, fitted:- £24.99.

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Controller board	£	69.99	H/D kit (no mechanism)	£	179.99

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All dot matrix printers come complete with Centronics cable which is compatible with ST, Amiga, PC. We can supply cables for other makes of computer for an additional charge. All Star printers include 12 months on site warranty, UK Mainland only.

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Star LC-10 Mk II	180/45cps	£	189.99	Star XB-24/10	80cps SLQ	£	499.99
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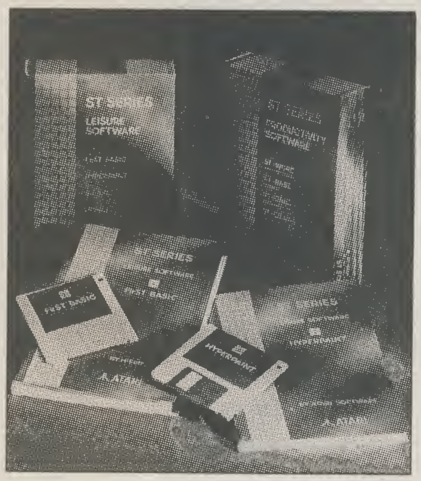
Introducing the powerful new Atari 1040 STE. With such an awesome machine, we're convinced the only limits you'll come across are your own.

Based on the incredibly successful 1040 STFM, the 1040 STE itself goes beyond the limits of its predecessor.

The 'E', by the way, stands for 'Enhanced'. But once you've discovered its amazing array of features, you may consider 'Enhanced' to be the understatement of the decade.

Perhaps the most outstanding feature of the 1040 STE is its graphics. Its palette contains over 4000 colours (all right, 4096 to be exact).

To ensure precise and realistic images, the STE features 'hardware scrolling', enabling smooth scrolling in any direction and split-screen effects. And, with the SM124 monitor, you'll get razor sharp black-out-of-white text that's as clear as the type on this page.



To complete the picture, it is able to 'phase-lock' its video output to an external video source, permitting direct linking to a Genlocking device.

The 1040 won't just have your eyes swivelling in their sockets. Your eardrums will also take a pounding from the 8-bit PCM stereo sound.

The new PCM (Pulse Coded Modulation) sound system's two chips allow the 1040 STE to replay high-quality sampled sounds, in stereo, without burdening the CPU. Or, for even more of an earblasting, just add a couple of RCA output jacks and power the sounds through your own stereo.

Of course we mustn't forget memory. One megabyte of RAM comes as standard. If that's not enough, the 1040 STE provides four SIMM sockets. Simply plug in some SIMM (Single In-line Memory Module) boards and boost the RAM up to four megabytes.

To help you handle all this technology, we've added even more: a Blitter chip, capable of shifting data at high speeds independent of the CPU, and a new version of TOS.

The TOS 1.6 (operating system) has an enhanced file selector with drive-change buttons, improved desktop with file move, MS-DOS compatible disk formatting, and better application installation and auto-booting facilities.

As you'd expect, there's a huge range of peripherals including hard disks, floppy disks, laser printers, colour monitors and even Megafile 44, Atari's unique 44-megabyte removable hard disk.

As well as all this hardware, there are hundreds of software programmes for the 1040 STE - we're even throwing in the ST-Series Productivity and Leisure bundles free.

The Productivity bundle features a database, spreadsheet, word processor and business graphics package, and there's S.T.A.C., FirST BASIC, Hyperpaint and Prince in the Leisure bundle.

If you're itching to get your hands on the controls, there are two 15-pin analogue controller ports (which accept paddles, light-guns and light-pens) and a 9 pin mouse port and joystick port.

With adaptors, up to six people can use the 1040 at one time. Just in case it's too much for one person to handle.

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EGA (ECD) 1640	564.35 649.00	651.30 749.00	825.22 949.00
2086 MONO	433.91 499.00	520.87 599.00	694.78 799.00
2086 CD	564.35 649.00	651.30 749.00	825.22 949.00
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PPC512D	(£433.91)	£499.00
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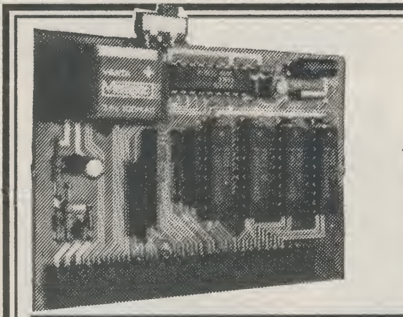
PPC640D	(£546.96)	£629.00
ALT286	(£1390.43)	£1599.00
ALT386sx	(£1738.26)	£1999.00



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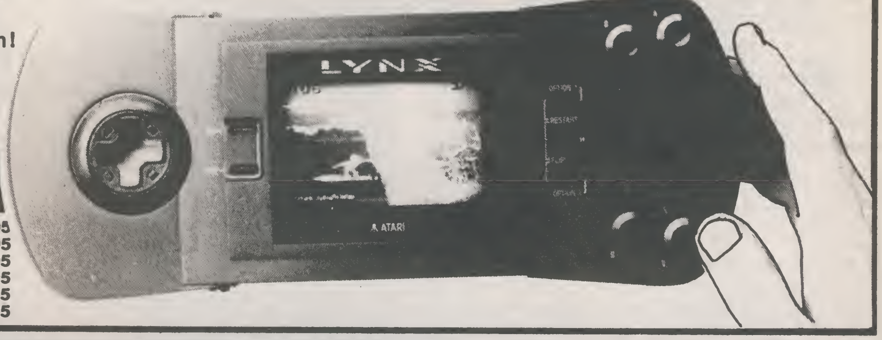

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A590 (20Mb) only £379.00
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RAM upgrades fitted free when bought with A590.

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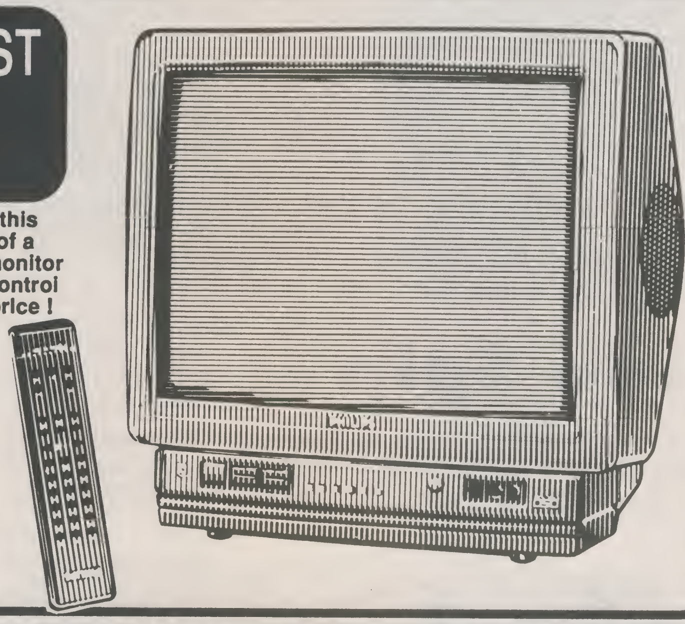

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Includes VAT, delivery and computer connection lead

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FREE with all ABC-286 machines : Logotron '8-In-1 Professional' inc. W/Processor, Database, Spreadsheet, Graphics, etc.

- ☆ 80286 Processor with 8 Mhz clock speed
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ABC-286 S.D./30 Mb without monitor	£803.85
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Optional 5.25" 1.2Mb internally fitted floppy drive available £119.00

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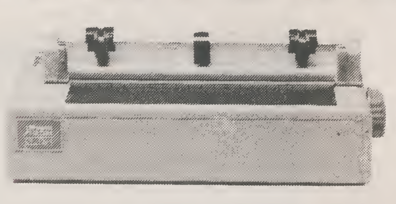

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- ✓ Logotron 'Eight-In-One' Integrated Package
- ✓ 'Top 10 Solid Gold' Games package

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PCS286 COLOUR	N/A N/A	1099.00 1263.85	1199.00 1378.85	1299.00 1493.85

- ◆ 101/102 key AT-layout PS/2 compatible keyboard (Mini-DIN)
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- ◆ Socket for Optional Maths Co-Processor
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Logotron 'Eight-In-One' package includes Wordprocessor, Database, Spreadsheet, Graphics etc. 'Top 10 Solid Gold' games pack includes Arcade, Adventure, Creativity, Simulation & Strategy titles.

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- ◆ NEC-V30 microprocessor 10Mhz clock speed, 0 wait states
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- ◆ Single or Twin 3.5" floppy drives with 720K formatted capacity
- ◆ 3 Full size XT-compatible 8-bit expansion slots

PCS 286

- ◆ Intel 80286 microprocessor 12MHz clock speed, 1 wait states
- ◆ 1Mb RAM standard, upgradeable to 4Mb on motherboard
- ◆ Single or Twin 3.5" floppy drives with 1.44Mb formatted capacity
- ◆ 3 Full size expansion slots; 1 x 8 bit and 2 x 16 bit (XT/AT style)

ACCESSORIES

5.25" 1.2Mb/360K drive with controller	£129.95
PCS 286 2Mb RAM Upgrade Kit	£119.00
PCS 286 4Mb RAM Upgrade Kit	£235.00

OPENING TIME

That was the show over and done with, and I don't want to hear any more about it. You might think that it's all free drinks, hotel rooms, expenses, meeting famous people and having a good time on the company's tab. But how would you like to be awoken at 4am by a drunken hack yelling: "Wow, did you see that new game from KnoBsofT! Far out!, let's sneak back in and play it man!", before he falls flat on his face? You wouldn't, believe me.

Now the important stuff. These pages have still not been nominated for the Best Two Pages in the Middle of a Weekly Computer Magazine Award. This prestigious prize is to be presented this Christmas at the 'We Are Such an Incredibly Talented and Clever Bunch of Magazine People' dinner.

So get those nominations in, and you have my personal promise that, if we win, the Publisher, Graeme (I never) Kidd, will take you all out for a slap-up lunch at the swanky Bath restaurant, L'Expensive Vache. We only need 100,022,323 votes to win. Each nomination needs a 5p contribution. Send them to me, personally, at the usual address...

The CENTRE

Two pages of competitions, insights, charts, true stories and gen

FROM THE ARCHIVE

A year ago this week my bank balance was written in the same colour. I was still wearing these cream white brogues with the yellow spats. So, what did *Express* report?.

SMALL IS LESS THAN BIG

The small, but beautifully formed, Poqet PC was launched to what *Express* called, "enthusiastic onlookers in London." We're talking tiny - pocket organiser size - we're talking MS-DOS compatible, we're talking £1,200 price tag, credit card sized slot-in business programs, 80C88 processor, 512K RAM, 640 ROM, double Supertwist mono LCD monitor, 200 pixel resolution. Mmmmm sounds fine. And, d'you know, it is..

HURD IT ON THE GRAPEVINE

The then Home Secretary Douglas Hurd, called for computer users to report pornographic computer images to him, for his personal vetting. His call went out in regard to on-line filthy sleaze and nakedness.

SAM PUN HERE PLEASE

MGT announced the launch of the SAM Coupé to what *Express* called: "A bevy of computer hack faithfuls" .We're talking 8-bit, we're talking £150, we're talking cartoon character, 256K RAM, Z80B processor, plug-in 3 inch drive, Speccy compatibility, built-in networking, and user friendliness. Mmmm, sounds good doesn't it? Well, you'll have to read next year's Archive to find out what happened to it. (*Stop that blubbing - Ed.*).

BEYOND OUR KENNY

Kenny Dalglish Soccer Match was released. A footy simulation, it was all set to sweep the world. *John Barnes Football Madness* was also rumoured within the industry to be near release - the only problem was that the game demo buckled under pressure when it was played abroad.

Tale Spin

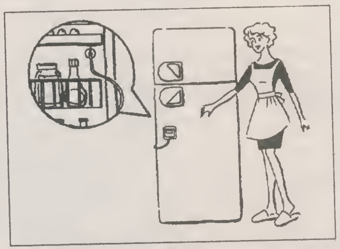
Have you heard any computer or technology related stories which made you gasp in amazement (or even in Ilford), has anything happened to you which you feel should be related to the rest of the world? If so send the news to Tale Spin, New Computer Express, Bath, Avon BA1 2BW. This week's stories compiled by Billy Shakes' old dog Spot's bone's ghost.

LESS ELBOW PLEASE

Here we go then with the first real prize for the Centrefold pages. Remember when servants would put their elbow in the bath to test the temperature? This, by the way, is where the phrase elbow grease came from; servants would plunge their elbows into vats of chicken fat to protect them from scalding. Well those days are well and truly over now, so Maplin Electronics has come up with a handy gadget for testing the temperature electronically. The Maplin Digital Bath Thermometer would normally cost you £9.95, but you can have it free by answering one simple question: What was the symbol for the *Hitchhiker's Guide to the Galaxy*?

a) *A Rubber cosh?*
b) *A Rubber Duck?*
c) *A Rubber?*

Answers on the backs of postcards, addressed to Elbow Grease Comp, The Centrefold, *New Computer Express*, 30 Monmouth St, Bath, Avon, BA1 1BW. There will also be some runners-up prizes, but I'm not saying what because it might help you with the question. No multiple entries.



• *Why check the heat when a servant can do it.*

TALKING OF WHICH

Indeed yes, talking of which - the *Atomix* competition had one of the most audacious multiple entries I've seen in all my years. A large pat on the back and a "you've got to give it to 'em, they're triers", goes to the Young family, and what I take to be their friend, Mr S Naylor of Bakewell, Derbyshire.

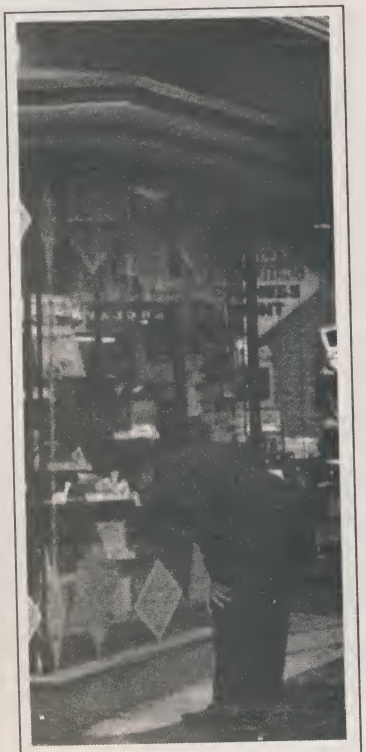
Noticing three white envelopes with similar writing and the same postcode, our grouse-eyed competitons editor opened them up to find: one neatly cut-out and filled-in coupon from Philip Young, one photocopied page with the following message, "I have photocopied this as I don't want to damage the article 'The Moving Picture Show' on the other side", from Mrs Clare Young, and another photocopy with no message from Mr Naylor. They all came from somewhere near Bakewell. Nice one people, nice one.

For this nippy piece of front I award a copy of *Astate* from New Deal Productions. Such an awful game that no one ever bothered finishing it.

READER ADDS

A classified ad, an offer which closed on - get this - September 20 1989, received on September 7 1990 (27p due, paid by us), the virus warning box ticked and with the following message:"There is a flu-bug going around Brighton at the moment. So keep out of the murky brown seawater." It must surely be a coded message.

Thanks to Annie Lykes of Tillet, Herts who wins a roll of 135/36 exposure Jessop film. And no stamp will be put on the envelope.



CAPTION FULL STRENGTH

The photograph printed above demands something. None of us could be arsed to make anything funny out of the damn thing. We took it up to the show, we even took it to Lourdes in an attempt to save it. Can you liven it up? The best caption wins a prize, so if you want software don't forget to tell me what machine and disk format you use. Send your entries to: Caption Full Strength, *New Computer Express*, 30 Monmouth Street, Bath, Avon BA1 2BW. Answers on pieces of original artwork from Snow White or contracts from MGM to appear with Sigourney Weaver are grate-

WISH I'D SAID THAT

Tricky bugger Johnny word. It likes making you look like a complete pillock. This week, all quotes come from the side-splitingly good *Electronics Handbook* by Jorge de Sousa Pires.

"A BUS is a bunch of wires used for the transmission of signals among several units. The word is derived from omnibus, contrary to private automobiles, the omnibus was a car for everybody in the early days."

"A BUG is an insect which causes a lot of trouble in its vicinity. A bug in a program acts l ike a bug - causing trouble to its vicinity." Ah yes, thanks Jorges.

REFOLD

l general this that and the other with Tim Smith.

• Most definitely not Ms Julie Andrews or a Von Trapp child. Sexist, yes. Do you mind? Let us know.

QUICK QUIZ

I have discovered some blank disks which I want to give to the first two lucky readers who can spot the five deliberate mistakes in the following review of *The Sound of Music* (a platform sing-'em-up from KnoBsofT). Write the mistakes on the back of a postcard and send it into The Von Trapp Children, *New Computer Express*, 30 Monmouth Street, Bath, Avon BA1 2BW.

THE SOUND OF MUSIC

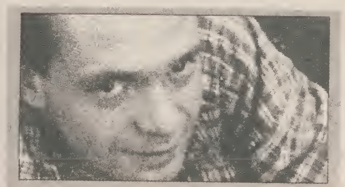
The game involves the Von Trapp children, Ms Julie Andrews and their escape from the Belgian army. Instead of bullets you fire musical notes at the enemy. In fact the first part of the game entails finding doe, ray, me, bar, so, la, tee which have been hidden by the evil foe. You play Julie. Once you've found the parts, you have to slaughter the Turkish army. Split-second timing is required. The Amiga, Spectrum, ST and other 16-bit versions of the game far outplay their eight-bit counterparts, such as the Sega mega-drive in sound and graphics, during all of this. All in all a good effort. 98 per cent.

LAST WEEK'S WINNER

This picture was published last week. I had threatened to send it to the old photies home - you know, where they mash them all up and turn them into glue which then gets used to stick Kylie Minougue concert tickets together (both of them). Well, it was saved and here's how it was done:

P Fox of Rhyl made this witticism: "Why's this computer flying over me?" Very droll, P, but K***G off.

The winner is JJ Croft of Milford Haven with: " So this is how to upgrade a Speccie." You win a copy of *Manic Miner* for your Spec. Cheers a lot there.



READER'S CHART

If you would like to see yourself in print – and win a prize – you should send your list, along with a photograph of yourself to, The Bleeding Charts Club, *New Computer Express*, 30 Monmouth Street, Bath, Avon BA1 2BW. This week's chart comes from Mr J Palmer of Amsterdam, Holland.

1) *Operation Wolf*	(Ocean)
2) *Populous*	(EA)
3) *Player Manager*	(Anco)
4) *LocoScript II*	(Locomotive)
5) *Xenon II*	(Image Works)
6) *Lotus 1-2-3*	(Lotus)
7) *Last Ninja*	(System 3)
8) *Space Ace*	(El)
9) *Stunt Car Racer*	(MicroStyle)
10) *Baal*	(Pysgnosis)

THE WORST

Predator	(Activision)

THE TOSH TEN

Ten translations of press releases and public relations statements:

1) Hype and speculation = who told you?
2) Most prestigious PC = most expensive.
3) No launch date set = we're late.
4) No comment = I'm not sure.
5) Absolutley no comment = yes.
6) Lifetime guarantee = of a mayfly at a frog convention.
7) User friendly = all front-end.
8) Computer literate = no front end at all.
9) The 'trade' = cowboys, hacks, PR people and wireheads.
10) Viruses are the biggest threat to the computer user = like to buy a virus killer?

How do you fancy letting off some steam? Do you fancy airing your views and getting insulted at the same time?

Well that's Letter Spray. If you can get away without an insult then you have sucked up to me, so don't even try because if there is one thing I hate more than people more clever than me it's yes-people. Here are this week's gladiators.

Sir,
Short lesson in substraction (sic)
NCE-Ql=-1 Reader.
Gerard Phelan (reader and buyer of all issues to date).

Dear Gerard, I hope you don't mind me calling you that, I am truly, really, obsequiously sorry to see you go, I really am. All those letters you sent in with positive criticisms, points of interest for other QL users, product news and information, hey we'll miss 'em.

All the other QL related stories which you gave to the world will be missed. Oh, that was us. Still, the postcard was nice and if you go you'll miss all the QL news which Express *will be running. Each to his own.*

Sir,
I thought that my fellow readers would be interested in the following true story about my Sinclair QL. Last month my efforts to create a mail merging routine for the QL finally paid off.

Although it has taken six months to write the program, and I am self-taught, it works wonderfully.
Mr P A Gray, Slough, Berks

Dear Mr Gray,
Without wishing to appear rude, Yaaaaawn!!!! That was one of the most somatic stories I have ever heard in my life. Thanks very much indeed.

Sir,
I am a business man running a small administration department for a London based stock-broking company. I have only just started reading *Express* and wonder if you have heard of any good PC games which might help to while away the boring hours between 9am and 5.30pm?
Mr M M Cazenove

Dear Mr Cavzenove,
If that's your real name then I'm a pink-jacketed options dealer. Anyway, PC games? Yes, you've come to the right place. When I worked up at the Stock Exchange, back in the days of old Nicky Goodison, me and the boys used to have hours of fun playing Leisure Suit Larry, Bard's Tale *and crash the hell out of the trading terminals when no one was looking. I recall we had great fun with that one October. Bye for now.*

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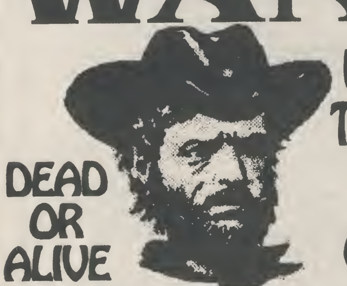

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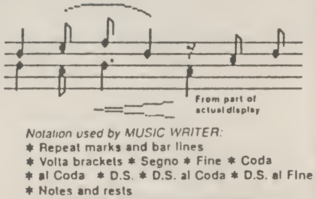

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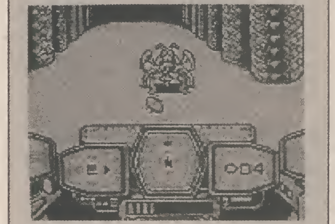
CONSOLE ZONE

Your weekly guide to the world of console gaming with Richard Frederick

NINTENDO GAMEBOY



Cosmotank from Asuka Technologies Inc. is a 2D and 3D action strategy game for the Gameboy. You must face the forces of the Master Insect in your Tiger tank. The game has "thrilling 2D scenes and striking 3D graphics" as you lock-on to your next target and fire without mercy.

Says Asuka, "The assault on the Master Insect takes place on and between five planets, each with its own unique inhabitants, terrain and hazards, including a system of caves and mazes. The battle is viewed from three different perspectives, including dogfights as you travel from planet to planet. Your Cosmotank transforms into a spaceship for interplanetary travel and fighting. The game features a wide array of sound effects and includes elements of role-playing."

PLAYING TIP

Be a _Master Karateka_ by selecting: power=2, life=5 and speed=3 on level one, power=4, life=5 and speed=5 on level two, and power=6, life=7 and speed=5 on level three.

ATARI LYNX

Klax, the playable puzzle game from Tengen, is due to be released on the Lynx next month. The game is simple in concept: you score points by catching coloured tiles that come down a conveyor belt, and arrange them in the same coloured vertical, horizontal or diagonal stacks of three.

Klax is a tic-tac-tile test of your hand-eye-brain coordination.

Lynx goes to the movies. Atari's hand-held baby was recently featured in cinema advertising accompanying the showing of *Back to the Future III*, *Gremlins 2* and *Dick Tracy* films. The Lynx is also being advertised on the Sky satellite TV channel this month.

PLAYING TIP

Fly any mission in *Blue Lightning* with these level codes: Level 2: `PLAN`; Level 3: `ALFA`; Level 4: `BELL`; Level 5: `NINE`; Level 6: `LOCK`; Level 7: `HAND`; Level 8: `FLEA`; Level 9: `LIFE`

CALLING ALL CONSOLE COWBOYS

What's the latest high score on your favourite video game? We want to print the UK's best scores on the leading console games available.

We would like your top scores on all Lynx and Neo-Geo games: *Alex Kidd* (Sega Master), *Altered Beast* (Megadrive/Sega Master), *Batman* (Gameboy/Megadrive/NES), *California Games* (Sega Master), *Columns* (Megadrive), *Double Dragon* (Gameboy/Sega Master), *Dr. Mario* (Gameboy), *Fantasy Zone II* (Sega Master), *Forgotten Worlds* (Megadrive), *Galaga 88* (PC Engine), *Ghouls n' Ghosts* (Megadrive), *Golden Axe* (Megadrive/Sega Master), *Gradius* (NES), *Gunhed* (PC Engine), *Hyper Loderunner* (Gameboy), *Life Force* (NES), *Makaimura Gaiden* (Gameboy), *Nemesis* (Gameboy), *New Zealand Story* (PC Engine), *Out run* (Sega Master), *Qix* (Gameboy), *R-Type* (Sega Master), *R-Type II* (PC Engine), *Shinobi* (PC Engine), *Space Harrier* (Sega Master), *Space Harrier II* (Megadrive), *Super Hang-On* (Megadrive), *Super Mario Bros. II* (NES), *Super Mario Land* (Gameboy), *Super Monaco GP* (Megadrive), *Teenage Mutant Ninja Turtles* (Gameboy), *Tetris* (Gameboy/NES), *Thunderforce III* (Megadrive) and *Wonderboy* (Sega Master).

Also, have you got tips, cheats or maps for any games on the Sega Megadrive, Nintendo Gameboy, Sega Master System, Nintendo Entertainment System, NEC PC Engine, Atari Lynx or SNK Neo-Geo consoles? This is your chance to share your expert knowledge with other players around the country!

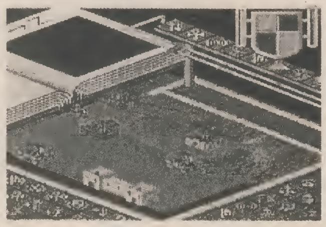
Send your hi-scores and playing tips to: The Console Zone, *New Computer Express*, Future Publishing Limited, 30 Monmouth Street, Bath, Avon BA1 2BW. Get playing now!

GAME OF THE WEEK

Populous • Electronic Arts • Megadrive • £TBA, grey imports around £60

This award-winning computer game from Electronic Arts is now available on the Sega Megadrive. You live like a god in *Populous* because you are one. "Create the world in a week and destroy it in a heartbeat," says EA.

Populous is an icon-driven strategy arcade game. You are a supreme being and you have the power to shape worlds. But as a deity, you need worshippers to give you the power to control nature. The more followers you have, the stronger you become. At first you're weak, with only the power to raise and lower land. Flatten land for your followers to build settlements. Flatten land around settlements, and the people can grow more crops and build bigger settlements.



• Sega Populous: *it's a hit.*

Soon you have the power to move the Good Papal Magnet, which is a huge monument shaped like an Ankh. You can tell your people to follow it anywhere in the world. They can go cultivate new land or confront evil.

If you collect enough power from your people, you can unleash devastating natural disasters on the evil people: earthquakes, swamps, volcanoes and floods. You use these catastrophes to destroy the followers of evil, but be careful.

Megadrive *Populous* is a straight full-screen clone of the 16-bit computer versions. Fortunately it's sufficiently different to the average Megadrive release to excuse this oversight and misuse of the Megadrive's superior graphics and sound capabilities. Highly recommended. I can't wait to play the Gameboy version.

SEGA MEGADRIVE

Electronic Arts has just released *Budokan* on the Megadrive. This martial arts game lets you enter the mystic worlds of karate, bo, nunchaku and kendo. Each art has 25 moves to learn and master. "Once you're a perfected weapon you're ready to face the challenges of the Budokan."

EA is also about to launch *Lakers Versus Celtics* and the *NBA Playoffs*, a full court five-on-five basketball sports-sim modelled on the actual '89 '90 season stats – and *Zany Golf* an "unbelieve-a-ball" simulation of miniature golf, with 18 crazy courses filled with lighthouses, burgers and magic carpets.

PLAYING TIP

Enter the last level in *Herzog Zwei* with this passcode: `JLJOIGLAOKN`

NINTENDO NES

PLAYING TIP

Kick ass in _Target Renegade_ by fly-kicking Siggy, punching Big Bob in the stomach, and foot sweeping the other street gang punks.

NEC PC ENGINE

PLAYING TIP

For extra credits in *R-Type*: hold down the [Select] button on the title screen and rapidly hit Button 1. If you switch auto-fire to maximum you get 21 credits.

NINTENDO SUPER FAMICOM

Nintendo is gearing up for a November Japanese release for its new 16-bit console. The Super Famicom contains a customised 16-bit CPU which can access up to 12Mb of memory. Just like the PC Engine, Nintendo's new deck also features dedicated graphics and sound processors, including hardware sprite scaling and eight channel stereo audio. The Super Famicom will cost in the region of £100.

Nintendo plans to have 30 titles ready for release before the end of the year.

SEGA MASTER SYSTEM

PLAYING TIP

To get endless credits in *Double Dragon* do 30 straight-up jump-kicks at the start of level four.

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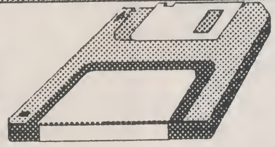

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THE PD COLUMN

There's a wealth of free software out there which is yours for the price of a disk. This week Adam Waring looks at the amazing demo programs which show off the power of your machine

It's that time again, PD pals. This week we take another look at the wonderful world of demos. The problem with reviewing demos is that they are very audio-visual. To really appreciate them you've got to see and hear them for yourself. Here are a few that are well worth looking into, and you'll just have to take my word for it...

AMIGA

The Amiga, with its powerful graphics capabilities and built-in hardware, has long been the choice machine when it comes to showing off demos. And the latest batch to come my way are no exception.

Station Anim, from Sentac PD, is a classic example of the power available to demo writers. It's a mini-movie, showing off a moonscape world. The action only lasts 30 seconds or so, but it's incredibly animated and detailed.

The landscape is perfectly detailed, showing the contoured surface of the moon. Giant satellite dishes stand out, their receivers rotating slowly. As the 'camera' pans across the screen, the landscape slides smoothly in perfect parallax 3D. A spacecraft is seen coming towards you, hugging the surface of the crater pocked planet. Its lights flashing and parts of its metallic anatomy rotating as it crawls towards you. Suddenly another, different, type of spaceship, much sleeker and more aerodynamic looking, flies onto the screen, narrowly missing the other ship. The view then switches to a zoom behind the new craft, as it finds the runway and comes to a graceful landing.

That's it. It all happens in a matter of seconds, but it's so exquisitely animated, and so perfectly detailed, that it's a joy to watch. There is one drawback. There are so many frames of animation, and such is the power needed to process this complicated demo, that you'll need at least one and a half Mb of memory for your machine to process it. It comes on two disks as well.

Senlac has another hefty demo or two up its sleeve. *At the Movies* is a cute little cartoon outlining the exploits of Amy the squirrel and her cheeky young friend at a night at the pictures. It's another memory-eater, taking one and a half megabytes again, but this time it comes on just one disk. After a long load, the show begins. As the lights dim, and the celluloid starts to roll, the boyfriend's arm shoots around Amy's shoulders. Then he starts go get a few ideas above his station (well, for a first date anyway), and it's slapped wrists time. Luckily Amy's bad mood doesn't last too long, and they kiss and make up...

It's cuter than little fluffy bunny rabbits. The facial expressions on the characters are excellent, and the way that the two rodent's frolics are timed with the silver screen action is wonderful.

There's a certain amount of sauciness going on, but nothing that would upset your grandmother.

Crazy Joe's PD library has a fair amount to offer the demo collector. Take *Popeye meets the Beach Boys*, for example. It's a spoof musical demo written by a bunch who call themselves the Mice Circus. In it, the old sailor (he never married) teams up with the west coast surfers to cut some vinyl – with hilarious results.

A familiar Beach Boys tune starts up. The boys start singing the *Wouldn't it be nice* backing vocals. It sounds like a verbatim track from a record – until the lead vocals cut in. Popeye's gruff voice sings along in perfect harmony with the music!

The melodies switch. As a special bonus Pluto joins in, singing along to a David Bowie track. It really needs to be heard to be believed – and even then you won't believe your ears.

And that brings us on neatly to another musical demo. This time it's not uproariously funny or anything – just some of the finest music you're likely to hear on your Amiga.

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It's called *Rebel's Music* after the group who created it, and comes from Seventeen Bit software. You have a selection of nine tunes that can be played, selected by use of the function keys.

As the music plays away, various graphical accompaniment follows the tune too. There's the now standard graphic equaliser, which jumps around merrily to the music. A little robot drummer is on hand, keeping the beat in perfect time to the music. A spectrum analyser keeps track of the channel of your choice too.

ST

Exclusively from Goodmans comes a rather natty demo called *French Kiss*. It features the soundtrack of the same name from the hit record by Lil Louis. The demo plays digitised samples from the record, as one of a number of bimbos dance away to the groove.

There are eight samples from the record, which can be played at a variety of speeds. The digitised piccies include Blondie, Kylie and Martika, who frolic around to the music – basically it's a number of digitised frames repeated over and over again. Anwyay it's well worth a look and a listen.

One way of advertising programs that professional software companies have latched on to, is to plonk a demo version into the public domain. If the product is good, then the punter is sure to want to buy the full blown thing.

That's what Readysoft has done. It's behind the Sylvian Bluth games *Dragons Lair* and *Space Ace*. Demo versions of both epic cartoon games are available from The Other PD Library's vaults.

The demos are fairly short sequences of what to expect from the full blown games. There's no interaction with the user, you just sit back and watch the action.

But it's fascinating stuff all the same. The heroes are animated with breathtaking quality, as they strut along, duck, dive and chop monsters heads off! I just can't wait to see the games for real.

CPC

Demos for this fine 8-bit machine are getting better and better. To see the latest, get hold of the *Democollector 1* disk from PDP.

It contains a collection of demos from various sources. Many of these top notch CPC demos originate across the channel in sunny France. The disk has been jam-packed with 12 demos for your perusal. Here are just a couple of what you'd expect to find.

The Cadet demo uses some pretty impressive full screen techniques. The whole of the screen is used from corner to corner. Press a key from the opening bit, and the whole screen unrolls before you – a really amazing effect.

The *Cocktail Shaker* isn't really a demo, in the sense that it doesn't offer fancy scrolling messages and split-screen techniques. Instead it tells you how to make cocktails. It can give you instructions on how to make eight of the intoxicating liquid comestibles. Type the number and a large picture of your chosen brew appears, complete with directions on the way to serve. ▨

WHERE TO GO

• Senlac Software PD, 14 Oaklea Close, Old Roar Road, St. Leonards On Sea, East Sussex TN37 7HB. Telephone: 0424 753070. The rather magnificent *Station Anim* demo comes from these good people. There's a minimum order of five disks, which will cost you £1.75 per disk. The price drops the more you order though. Ten or more and they're £1.50.

• Crazy Joe's PD, 145 Effingham Street, Rotherham, South Yorkshire S65 1BL. Telephone: 0709 829286. There's crazy PD in abundance from this crazy bunch of Amiga PD folk. Disks are £2 each, but the price drops to £1.50 when you order more than ten.

• Seventeen Bit Software, PO Box 97, Wakefield WF1 1XX. Telephone: 0924 366982. There's demos a plenty to be had from these chaps. Disks are priced at a reasonable £2.

• Goodman Enterprises, 16 Conrad Close, Meir Hay Estate, Longton, Stoke on Trent ST3 1SW. Telephone: 0782 335650. The good men at Goodman can offer you a demo or two. Disks at £2.50. Order more than five, and they're £2.35 apiece.

• The Other PD Library, 108 Kenmare Road, Wavertree, Liverpool L15 3HQ. Telephone: 051 7344465. If you've looked all over the place and can't find what you need, why not try The Other PD Library? Prices start at £2.50.

•DPD Public Domain, Ruxley House, 28 Mount Hermo Road, Woking, Surrey GU22 7UH. CPC PD from DPD. Copy charge is 50 pence for one side and a pound for two. You'll need to supply your own disk though.

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FOR ONLY £199 INC VAT

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- ★ ***Processor:*** Intel 80C88 at 4.9152Mhz.
- ★ ***Operating System:*** Compatible with MS-DOS 2.11.
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- ★ ***RAM:*** 128K with an internal RAM disk, configurable from 8K. Externally expandable to 640K RAM.
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- ★ ***Character Set:*** Extended IBM ASCII (255 characters).
- ★ ***Mass storage:*** credit card sized memory cards (32K or 64K or 128K RAM).
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- ★ ***Peripherals:*** 60 pin expansion BUS to take serial and parallel ports and memory expansion units.
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- ★ ***Weight:*** 495 grammes (with batteries).
- ★ ***Applications:*** calendar and diary, address and phone book, Lotus 1-2-3 compatible spreadsheet, text processor, communications software.

COMING SOON!

In addition to the excellent software built-in to the Portfolio Free of Charge (see right), other software and peripheral products, such as the sophisticated Pocket Finance package and serial/centronics interfaces are available. And it doesn't stop there. Many manufacturers have recognised the potential of the Portfolio and have already started to design new peripherals and software. Products currently under development include: Serial interface with built in mini modem, Apple Macintosh interface, business, utility and programming software plus a range of adventure and battle strategy games. For further free details on the Portfolio range, fill in the coupon below and return it to Silica Systems now.

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To get you started, Portfolio comes with a suite of five useful functions built-in, all accessible from a simple menu display.

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Your Portfolio will be invaluable in the office or at home as a powerful pocket calculator. It has a full range of functions, including factorial, power and root calculations, all with multi display formats and memories.

ADDRESS BOOK & DIALLER

Portfolio has a complete address book facility that allows you to store hundreds of addresses and phone numbers. And, at the touch of a button, you can retrieve any one of them, or search for a specific grouping, such as "all Italian restaurants". And, when you are ready to book your table, hold your Portfolio to your telephone mouthpiece and use its special built-in tone dialler to dial the number for you.

TEXT PROCESSOR

The Portfolio's built-in text processor program includes word wrap, line and column count, string search, in fact most of the functions you would find in a word processor. It handles printer and word processor control codes and allows easy transfer of files between Portfolio and your desktop PC.

SPREADSHEET

For real calculating power, Portfolio has a Lotus 1-2-3 compatible spreadsheet built-in. It has 127 columns x 225 rows and reads/writes Lotus V1.0 and V2.01 files, so you can transfer data to and from Lotus 1-2-3 on your desktop PC. The Portfolio's 256K ROM includes MS-DOS and PC BIOS compatible systems software.

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Portfolio can store and retrieve data and programs from its own RAM, or from small credit card size memory cards, that slot into its built-in card drive. The cards are available in three sizes, 32K, 64K and 128K, so you can carry a library of data in your pocket. The card drive also accepts ROM cards, which can contain commercial or custom software.

POWER SUPPLY

Portfolio is powered by three AA batteries which will run for up to six weeks with normal use, or from the mains using an adaptor. All the peripherals take their power from the Portfolio, so no extra batteries or adaptors are required. A 'battery-low' warning and memory back-up ensure that information is not lost when the batteries are changed.

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Mark Higham's GAMES WEEK

A film company buys its way into games, more delays with the big titles, a challenging new beat-'em-up and the fastest route through Damocles ever.

Europe is where the money is as far as the home micro games scene is concerned. At least that's the impression you get with Lucasfilm taking big strides into Europe by getting involved with the German-based Rainbow Arts. The computer entertainment arm of the film giant has signed a deal which involves Lucasfilm in the design and production of Rainbow Arts' latest game, *MUD Sports*.

The deal is a tasty earner for Lucasfilm, which will sell the game in the States under its own name while European versions carry the Rainbow Arts name with a small mention given to Lucasfilm. The American film giant, made popular by such releases as *Zak McKracken* and *The Last Crusade*, can use its experience of home micro games to push for any changes it considers necessary.

Garden
Bank
Account
Expenses
Credit

• Lucasfilm dips its feet in MUD for a change.

MUD Sports is billed as a fantasy sports game, which could mean just about anything. A combination of action and strategy areas, the idea is to bribe, fight and manage your way to the top of the MUD Olympics. In the action areas the objective is to place a live frisbee in your opposing team's goal (weird or what?).

Well, knowing how much they interfered the last time they struck up a deal of this kind with Empire, prepare for some big changes!

That deal involved Empire's *Pipe Mania*. The game's release was promptly delayed for more than six months and underwent numerous revisions and a name change before it finally hit the UK shelves in February. We'll have to wait and see if the same fate is about to befall *MUD Sports*.

LATE AGAIN

Spending the occasional hour mindlessly blasting terrorists with a sub-machine gun can be an invigorating experience, even if it does tax your trigger finger.

Ocean fulfilled this need for blood thirsty Amiga owners last month with the release of *Lost Patrol*, but ST owners have yet to see any sign of the game. Ocean is now saying it will be ready for release towards the middle of October.

Amiga owners aren't faring much better with *F29 Stealth Fighter* from MicroProse. Read the adverts and you could be forgiven for thinking MicroProse has had a warehouse full of *F29* Amiga games for the last few months; try buying a copy, and you soon realise the adverts are just a sham.

The game has now been given an end-of-September release date – we'll wait and see if it can make it.

STEALTH FIGHTER

• Advertised for months but still Amiga owners can't get their hands on F29 Stealth Fighter.

The *F29* problem isn't isolated. Software houses repeatedly advertise their games as being available now when they know damn well that they are miles off. The worst of it is that such behaviour is almost expected in the games world because all the software houses do it; from the giants like US Gold and Ocean to small fry like Entertainment International and Hewson.

If you saw adverts promoting Morrissey's latest sin-

GAME TIPS

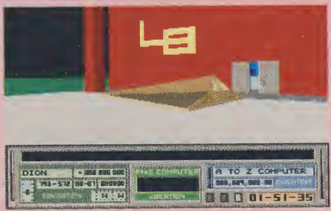
DAMOCLES • Novagen

I've been playing *Damocles* for weeks now and judging by its position in the charts, I'm not alone. The game is enormous and there are all sorts of ways to complete it. Here's one of the quickest methods of saving Eris from certain doom.

CAPITAL CITY SPACEPORT AHEAD
ERIS
DAMOCLES
EMPTY
03-10-28

At Eris Capital spaceport, enter the building and pick up the key to the VIP limo. Jump in and the first building you find is the State Office. Inside, pick up the Damocles file and have a read. Then jump in the lift and go to the President's office. Haggle with her for the bounty until she goes to 20 million ECUs. She tells you where to find the key for a spacecraft, so fetch it and get back in the car.

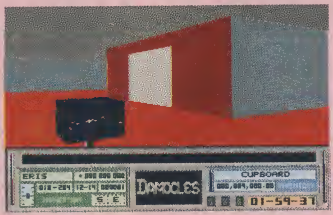
You find the craft at the Moorby School of Flying. Jump in, take off and head for Eris Capital 15 03. There's a trader here with a pressure suit for sale. Buy it, you'll need it later.



Fly to Key West 07 07 and go into the basement. You find antigrav, which you need to pick up your spaceship. Now head for Hantzen's Laboratory at Bare Island 06 05. Go to the basement and pick up Key B, which is for his new hiding place. Upstairs are some interesting documents to read. Then nip down the road to 06 06 and buy thermal underwear from the trader. You need this on hot planets.

DION
BIRMINGHAM ISLAND
A TO Z COMPUTER
02-29-31

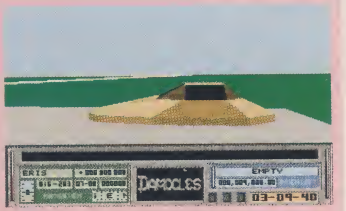
Go to Snow Island sorting office at 03 00 and read the documents. You'll find Detonator 2 disguised as a cupboard. When you have it go to Eris Capital 11 08, pick up your spaceship and go inside.



Here you find a transporter which you can use to jump from planet to planet without wasting time in space.

Walk in and out of the transporter until you get to Metis. Pick up the transporter and take it with you to Metis 05 06. Inside is a table. When you walk up to it a concealed door opens, revealing Detonator 4, which is a wash-basin.

Re-enter the transporter, by dropping it and walking in. Come out at Hantzen's new house at Ur City, Gaea 07 01. Detonator 1 is here, disguised as a sideboard.



Leave the building (you have the key already) and go to Ur City 09 02. In the basement is a useless piano useless and the Novabomb.

The last Detonator, number 3, is for sale at Chaldea Metropolis 05 06. It's disguised as a Hi-Fi. Buy it and you have all you need to finish the game.

Leave the planet by spaceship and head straight for Damocles. Land and dump the Novabomb on the surface. Now fly to a safe distance, switch on all the detonators and watch Damocles turn into a dustcloud.

That's it, except for the other 80 per cent of the game you still haven't seen of course!

• *And where's Lost Patrol for the ST? Still no sign yet it was first forecast months ago.*

gle, then popped down to your local Our Price to buy it, you'd expect it to be there. You certainly wouldn't expect to wait for another three months to see it. Come on software publishers, get it right for a change and tell us when the games are *really* coming out, not just a bit of inspired guesswork. ■.

THE 16-BIT TOP TEN

For the week ending 7th September 1990

	Last Week	Game name	Publisher	Format
1	NE	Corporation	Core Design	Ag
2	2	Shadow Of The Beast 2	Psygnosis	Ag
3	1	Kick Off 2	Anco	ST Ag
4	8	Targhan	Action 16	ST Ag PC
5	5	Midnight Resistance	Ocean	ST Ag
6	10	Yogi's Great Escape	Hitec Software	ST Ag
7	4	Shadow Warriors	Ocean	ST Ag
8	11	Italia 1990	Code Masters	ST Ag
9	7	Pro Tennis Sim.	Code Masters	ST Ag
10	NE	BSS Jane Seymour	Gremlin	ST Ag

ST – Atari ST Ag – Commodore Amiga PC – IBM PC
Chart compiled by Gallup. © European Leisure Software Publishers Association.

GAME REVIEW

GOLD OF THE AZTECS

US GOLD • £24.99

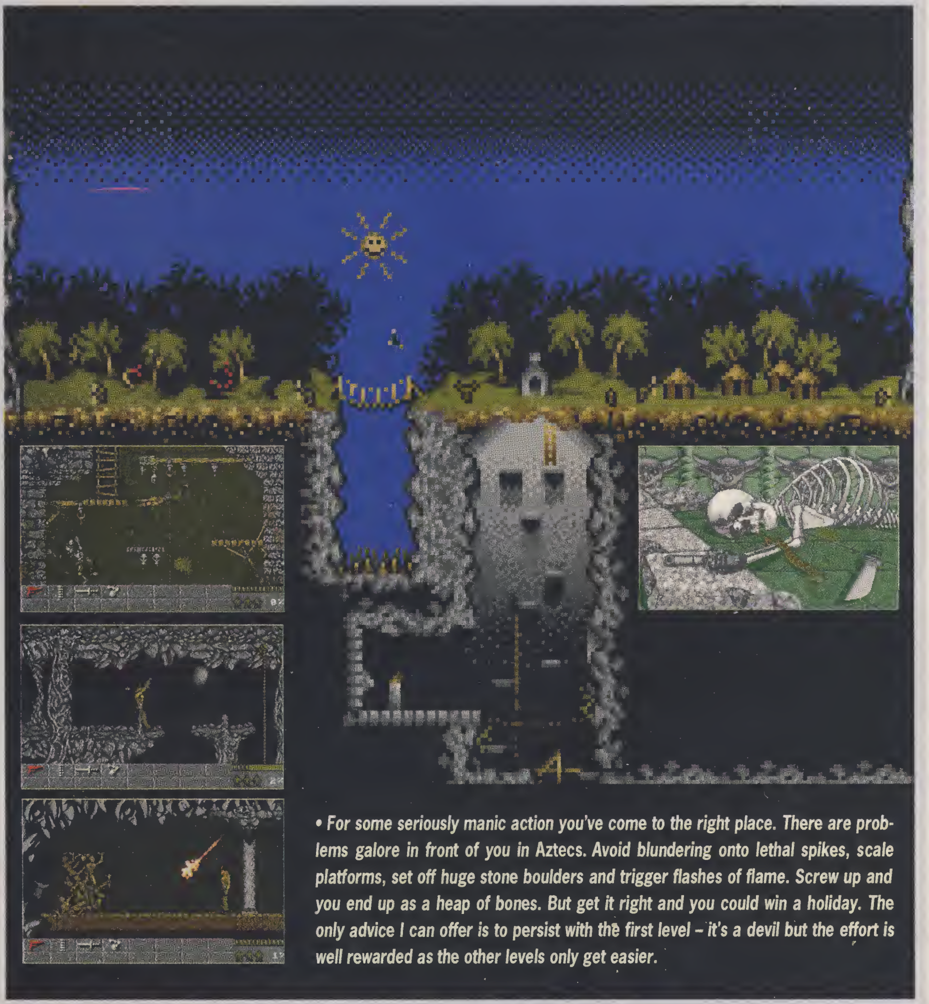
Take a sharp intake of breath, pull up your loin cloth, whip out your sword and go for those jungle beasts. Prove you're a real hero by ripping their bloody throats out in this the first beat-'em-up action game from US Gold since they burnt their toes with *Vigilante.*

Okay, so you're not exactly wetting yourselves with excitement. That's hardly surprising – there's something inherently tedious about beat-'em-ups. It's to do with the fact that they're all virtually identical. *Robocop* was really little different than *Shinobi,* which was itself identical to *Double Dragon* with a few different sprites. *Gold of the Aztecs* makes a welcome detour from this tired and trusted formula by including graphically original enemies and a maze of problems to overcome.

The character you play with is a sprite about three inches tall. He's capable of whipping out a gun, somersaulting over oncoming enemies and using a sabre to slice his way out of trouble. This might sound like overkill but the problems are so diverse you need the lot. As you wander through the five levels you come across hosts of bad guys, from gun-toting dwarfs to snapping flowers. There are also collapsing bridges to negotiate, rolling rocks, bouncing boulders and lethal lily pads.

The character sprites are some of the largest I've ever seen and you battle with enormous beasts right from the very first scene when an elephant charges blindly towards you. The hero of the game strides around abnormally, which is the only criticism I can level at the animation. If you're a lover of sampled music then you've been sadly neglected recently but *Gold of the Aztecs* delivers some of the most atmospheric tunes ever. There's even the usual range of spot effects.

The main fault with the game is that the first level is just too difficult. It's going to take you an age to work your way through but if you persevere you're going to find that the action gets easier – and more fun. It's a serious shortcoming, but if you can tolerate it you're going to fall for this one in a big way.



• *For some seriously manic action you've come to the right place. There are problems galore in front of you in Aztecs. Avoid blundering onto lethal spikes, scale platforms, set off huge stone boulders and trigger flashes of flame. Screw up and you end up as a heap of bones. But get it right and you could win a holiday. The only advice I can offer is to persist with the first level – it's a devil but the effort is well rewarded as the other levels only get easier.*

• *The beat-'em-up is back, this time with a wealth of puzzles, more bad guys and some wonderful graphics. US Gold is running a competition to Mexico for anyone who manages to work their way through the entire game.*

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TOP THREE TITLES
-YOURS FREE

FREE GAME!

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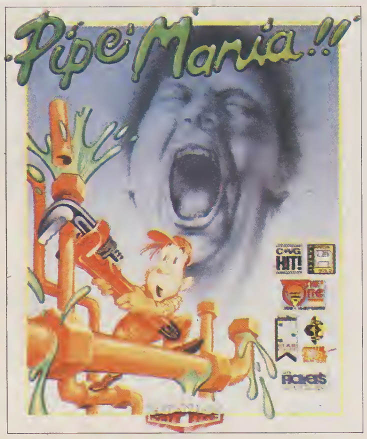

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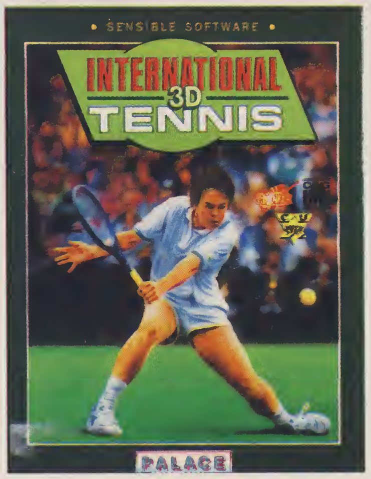

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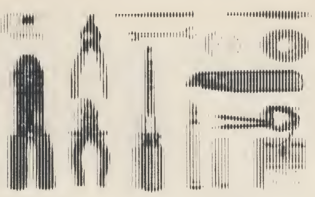
CIRCUIT CITY



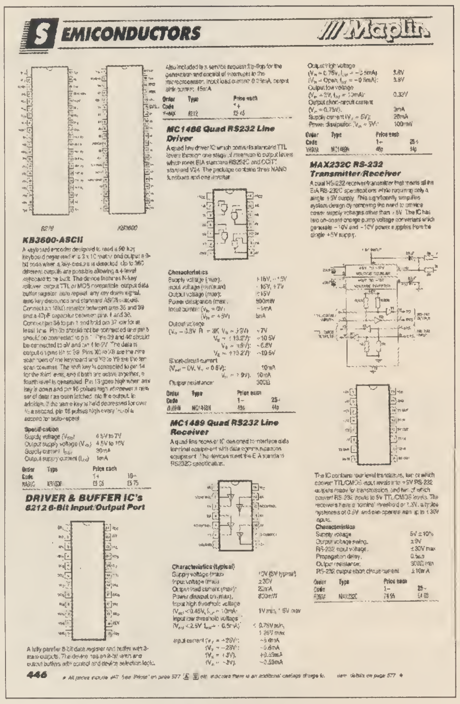
Ever wanted to be able to build your own add on for your computer? Each week Keith Pomfret builds the skills you need – this issue he looks at that essential document, the Maplin catalogue.

Before the print had time to dry on the first Circuit City there was a thump on the mat behind the door and the 1991 Maplin catalogue had landed.

For the uninitiated and the unwashed, the Maplin catalogue isn't a holiday brochure dealing in 1950s holiday camps but a bible for anyone fancying a swim in a lake of molten solder.

For £2.45 at W H Smith and other good outlets, the catalogue is a 600-page A4 paperback with more information (and more pages) than the local telephone directory.

I had intended to draft a quick list of the contents, but after about 500 words of nothing except a list, I gave up. If you want to buy a reference book that will not only show you the part you need but also sell you it at a good price and even offer a project to include it in, then this is the book for you.



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DRIVER & BUFFER IC's
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446

• *Techie or what?: the new Maplin catalogue*

If you don't want to get your hands dirty but want to learn a bit about the insides of your kit before you light up the oxy-acetylene, there are over 30 pages of reference books to do the biz; everything from wiring your house to troubleshooting your CD-ROM drive when it falls over.

To give you a delicate taste of what's in store, here's a list of the major headings covered in the book: aerials, audio, video, computers, books, boxes, cables, capacitors, communications, connectors, electrical accessories, entertainment, hardware, heath-kit, knobs, microphones, musical effects, opto electrical, panel meters, pcb equipment, projects and modules, protection, radio control, resistors, semi-conductors, speakers, switches and relays, test gear, tools, wound components and, of course, the all-encompassing miscellaneous.

At some point we'll be diving into this comprehensive catalogue for bits and pieces and probably taking on some of the projects that are available in kit form.

Maplin has long been a supplier of components for enthusiasts, but recently the burnt fingers image of the hobbyist has been discarded in favour of that of the upwardly mobile technician. Maplin is no longer spoken of in the same breath as train spotting, pigeon fancying and ferret trousering.

The switched-on user can wield the iron (butane powered nowadays) and, following simple instructions, turn out an entire line of peripherals for their micro.

To cope with the change of image Maplin has opened a string of component and project shops in Birmingham, Brighton, Bristol, Leeds, London, Manchester, Newcastle upon Tyne, Nottingham, Reading, Southampton and Southend. Further stores are due to open in Glasgow, Sheffield, Liverpool, Cardiff and Chatham.

Maplin is on 0702 552911.

If there's not a Maplin branch to hand and you like to see what you buy before you buy it, don't forget Tandy. There's a Tandy branch in most large towns and Tandy sells most of the necessary tools, components and consumables for the average computer or technology project. Find your nearest Tandy branch by dialling 0922 710000. ■

Next week in Circuit City Keith Pomfret explains how to upgrade your old ST's single-sided disk drive to a nice modern double-sided one.

CORPORATION TIPS

Here are a few quick tips for happy computing:

1. Keeping the keyboard and screen clean and gungeless.
A standard one-inch paintbrush whisked around keys and screen about once every half hour of use will catch the squirgly, dusty and sticky bits before they've had time to take root.
2. Can't afford an anti-glare screen?
A section cut from the leg of a black stocking (ask the missus first) will go some way towards cutting down the glare but won't stop the radiation.
3. A floppy disk box to match the lounge.
Try one of the larger retailers such as Asda, B&Q or Do it All for a CD box. Available in mahogany, pine and black ash finishes, these two-drawer monsters are the answer to the ugly smoked Perspex and cream plastic box problem.
4. Dinner-proof protection for the keyboard?
Does anyone remember the movie *Baby-Face*? The inspiration for this tip was born in the closing minutes of that film.

Wrap the complete keyboard in cling film, making sure that it's a good fit but not so tight as to hinder key movement. While not as pleasant as a custom designed key-screen, it's cheap, replacable and easy to do.

SUGGESTIONS FLOOD IN

It doesn't take *Circuit City* citizens long to respond. In the couple of days that have elapsed between *Circuit City* 1 hitting the streets and *Circuit City* 2 going to the printer, there have already been a wodge of suggestions and ideas for projects. Remember that the rule is: Send it on a postcard. Nothing else is acceptable. For those who can't be bothered to turn back to the page with the address on it's, Circuit City, *New Computer Express*, 30 Monmouth Street, Bath BA1 2BW.

No phone calls, faxes, letters, old envelopes or scraps of paper. Postcards only please.

Here are some of the suggestions to date:

- PC upgrades.
- MIDI for Amiga.
- Complete do-it-yourself PC from the plug to the monitor.
- Add an extra drive (to anything).
- Do it yourself PC cards.
- Amstrad CPC Plus connector adapter.
- Memory upgrades.
- Processor upgrades.
- Software surgery to get the best out of CP/M, DOS etc.
- Add a VGA monitor.
- Turn your wife into a toad.

(OK, so we get some weirdos reading Express)

- Power supplies.
- Importing grey kit and making it work in the UK.

And many, many more. If your pet project isn't on the list, get out the postcard and get scribbling.

SEND US YOUR MANUALS

So you've got a Zzlijjnikik 47, the only machine designed to run Japo-Belgian CP/M, and as well as using it as a terminal, you have spent loads of time translating the Buddhist parchment manual into English.

Spare the time to scribble down the tech-spec and the pinouts of the ports and post them to Circuit City. That way we can help the next individual who buys one from an auction and runs into bother with the left-hand spiral blob matrix processor skew drift. The above goes for any unusual, or obsolete machine.

And don't forget, if you have any technical queries about your unusual machine, write to Tech Tips. Even if we can't help directly our loyal readers come up with the answer in no time – it's definitely a stamp well used.

TECH TIPS

Does your PC keep packing up? Is your Amiga less than friendly? Would your ST try the patience of a saint? Write to Keith Pomfret's Tech Tips and we'll soon see you right. Send your sorry stories to Tech Tips, Beauford Place, 30 Monmouth Street, Bath BA1 2BW.

■TIP! SCART raising

Thank you for printing my letter recently concerning SCART leads, I'm sure the public were completely disinterested.

I have solved the problem. Mitsubishi, in certain types of TVs, used an automatic blanking resynched system or something. Anyway, you need to get between 1.5v and 5v across pins 16 and 18. Pin 16 being positive, i.e connected in a two-pin cell battery holder.

This information comes from a very, very nice man at Mits...

Not so worried, Now living between Weybridge and Walton.

■HELP! Animated Amiga

Having just recently bought my Amiga 500 a 512K upgrade I am very interested in getting a good animation program for this machine

A lot of the packages I have looked at seem to be geared to producing animations via video-tape, namely *Deluxe Paint III* and *Photon Paint II*. Unfortunately I do not have access to my very own video recorder, so I was wondering if there are any other programs available with which you can produce good quality 'disk based' animations that can run independently for a reasonable length of time, say two or three minutes long.

I have looked at *Fantavision* and, although it's good, you cannot produce detailed graphics with it. Is the program called *Zoetrope* any better?

PJ Upton, London SE12.

Asking which animation program will run a sequence a couple of minutes long is rather like asking: "How long's a piece of string?" Animation is memory intensive; the more detail and the bigger the object being animated, the more memory it takes. A simple small stick man could probably be animated for a long time in a 1Mb Amiga, but a full cartoon-style screen animation wouldn't last above a few frames.

To see what can be done, with your 1Mb Amiga, look at some of the PD animation demos (the 1Mb *Walker* demo is a good example). To answer your question about *Zoetrope*, I love it and a colleague hates it. The eye of the beholder and all that. It is a good functional animation package with simple control and a multitude of features. To get the best from it though you'll need to save up for more memory. For animation 2Mb is desirable, but the more the merrier.

■HELP! Machine link

I would like to know how to make a null modem cable, or whatever it is called, so I can link up two Amigas to play games like *Stunt Car Racer* and *Falcon* etc. I think it was printed in your pages before and I have been tearing my hair out trying to find it in your back issues.

All I need to know is what pins to connect, as I know it is serial port to serial.

S Smith, Sheffield, Yorks.

The quickness of the hand deceives the eye! Your letter was dropping in the *Express* mailbox as the self same project was winging its way toward our printers and so you won't need an answer to your question. If however you are a bad sod and missed last week's issue, you'll find the pinouts for your Amiga's serial port in the user manual. You should connect TX-RX, RX-TX and Gnd-Gnd.

■TIP! Copycat

I have used the ST for quite some time now and would like to recommend these tips for new ST and STE owners.

When you use the ST copier, sometimes it annoys you because it says that both the source and the destination disk have totally different bytes and data. To avoid all that, all you have to do is when the computer asks you for your source disk, insert your destination disk instead and press [return] twice, then insert your source disk and carry on copying. Another way to copy using the single files routine is to open your destinations directory and drag the drive icon which contains the source, into the destinations directory (although it will be constant disk swapping unless you have an external drive).

Jason Chau, London N4.

■ADMONISHMENT! Ouch

I would very much like to know how a letter which was clearly addressed to Bertrum Carrot got onto your recently acquired Tech Tips page. If I had wanted this letter to be published then I would have addressed it to 'letters'.

However, since you did print it the original paragraph, which you extracted and jumbled until it was complete nonsense, from my letter is reproduced here:

You might like to point out to your colleagues in the news dept of Express, that an Arc equipped with a 30MHz ARM 3 (or a FOX, that is an Acorn R260 or R255) could easily outrun Atari's TT, albeit at a greater price where the R200 series is concerned. You might also encourage them to cover Acorn's new R200 rivals which was recently announced. Further, you might like to tell them that even if Atari's 32MHz TT is faster than a 4/8MHz ARM 2 based Archimedes then the power/price ratio is still won hands down by the A3000 (and we're talking the original here not Commodore's imposter)

In reply to your comments, it is hardly relevant in this case whether I know people who own TTs, Amiga 3000s, R260s etc, since I am merely pointing out that Acorn has bigger, faster computers as well as IBM, Commodore and Atari. It seems to me that recently your news dept has been full of journalists falling over themselves to find some new Amiga 3000 or TT development/rumour. Yet when it comes to a definite fact concerning an Acorn machine of similar nature, they don't want to know.

Chris Eason, Leamington Spa, Warwickshire.

Your letter had been heavily cut due to lack of space but the context had been left intact, and indeed the paragraph that it is claimed we jumbled has been included verbatim.

Your letter found its way into Tech Tips because after putting Bertrum out to grass we felt that your comments deserved more than the 'return to sender tray'. And I can promise that as long as you send letters with valid comment and

■HELP! Searching for an ancient cover disk

Having been reading the back issues of your sister publication *Amiga Format*, I noticed that on issue 7 of *ST Amiga Format* a program named *Iconiser* was on the cover disk.

As this is a program I would like to obtain I was less than pleased to learn that the back issue had been sold out. Please could you inform me how I can obtain this program; is it in the public domain or could I get the full disk from Future Publishing?

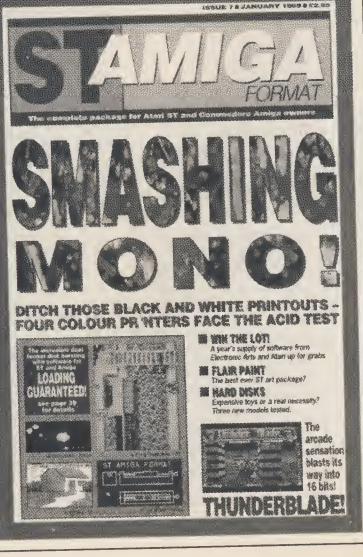
Marshall O'Donnel, Bolton, Lancs.

Which goes to show that if you aren't fast, Future's whizzy mags sell out.As it happens we had a copy of that particular disk lying around, and it's flying through the post to you now.

In general though the simplest way to obtain the program that you want is to find out if one of the PD or shareware libraries have it on one of their disks.

Look out for advertisements in *Express* and *Amiga Format*. PD Libraries can be a good cheap source of software.

In the case of *Iconiser* it was in fact a program sent in by a reader, one M Saunby (may his name live forever), rather than a PD program, so you might be out of luck with the libraries.


ISSUE 7 • JANUARY 1989 • £2.95
ST AMIGA FORMAT
SMASHING MONO!
DITCH THOSE BLACK AND WHITE PRINTOUTS – FOUR COLOUR PR'NTERS FACE THE ACID TEST
LOADING GUARANTEED!
WIN THE LOT!
FLAIR PAINT
HARD DISKS
The arcade sensation blasts its way into 16 bits!
THUNDERBLADE!

• ST Amiga Format: ***seeking out obscure back issues.***

■HELP IBM PD Library

I am seriously thinking of setting up a PD/shareware (IBM, more formats later) library in Ireland as I know of no other, only BBs. I am not exactly sure how to go about it though. Could you please clear up a few points for me please.

- **How would I go about building up my library? Is a hard disk essential?**
- **Will I need a modem?**
- **Could I receive shareware from authors by telling them I am a distributor?**
- **Where is the best place to obtain PD software cheaply to set up the library?**

P Meehan, Sutton, Dublin 13.

You only need three things to set up a PD library.

1. PD software.
2. A computer or disk duplicator to copy it.
3. An address to advertise it from.

Most PD libraries nowadays seem to start by buying a large percentage of PD from other libraries and putting it on their own disks. While this happens, it's better to try and find your own software authors and use their work. This way you can have a rapport with the guy (or guyess) who wrote the programs.

Public domain software is that which the author has agreed may be freely distributed without charge so you may only charge a duplication fee and for the media that it's on. One of the drawbacks from the point of view of a PD library is that anyone can copy the disks and set up in competition. This happens regularly as someone finds a niche in this fast expanding market. Shareware is different, being free to copy but requiring a registration and fee if you intend to use it. Shareware relies on the honesty of the end user and/or library.

If you intend to make a profit, you'll have to stump up some cash and advertise your products, and for submissions from authors. However if it's going to be a non-profit making hobby, you might slip a free ad past Sami-the-scrutineer. But no promises.

technical know-how, they will be shoehorned into the public eye unless you specifically request otherwise. Don't hide your light under a bushel.

■HELP! Purity

I have just purchased a Vortex 40Mb hard drive for my Amiga 500 and am in the process of transferring over its various programs. Not only this, I also made a few modifications to the start-up sequence (I had already done a very short start-up file for my DOS disk so that it loaded up after the shell). This I am enclosing for the reason that something has gone wrong. When the drive began to operate I got the message 'Pure Bit Not Set'. Although it didn't do any harm I would be interested to hear what this means as there was no mention of it in the Amiga DOS guide (3rd edition). Looking at the start-up sequence I believe it has something to do with the shellseg in the `I : dir`. But what exactly does it do?

Also, a question about the Park command. Although I run this it doesn't seem to do anything, except making the hard drive squeak, and the drive just carries on as normal. i.e when the computer is switched off the drive makes noises. I thought parking the drive meant putting the drive into a safe position. Is this just me being paranoid or is something not right?

D Tweedie, Southsea, Hants.

I have to hold my hand up and say that the purity of your bits is a new one for me. A phone call to the nice Vortex people drew a blank too (their baffle you with bullshit dept was out to lunch), so until they return and answer the question, I'll throw that one open to the readers.

The Park command should move the read/write heads in from the plattens and put them in a safe place for transportation. If the drive is squeaking, take it back to where you bought it and politely bang your fist on the counter to get them to give it a good dose of looking at.

■HELP! Modem manual

Please could you, or any of your readers, help with the following. I recently purchased a Nokita ECM 124 modem to use on my Amiga 500, but there was no manual, or any documentation with it. I have tried to find an address of the company who distribute this modem, but so far no luck.

Thomas Brennan, Pimblico, Dublin.

So if anyone out there would like to lend Tom Brennan the manual, send it to the usual address and we'll pass it on.

■HELP! Graphics port

I have recently bought an Amiga 500 (1Mb) as an upgrade to my Atari 520STFM, again a 1Mb.

I mainly use it for graphics purposes and would eagerly like to know if it is possible to copy some of my graphics (Degas PIC format) onto my Amiga (*Zoetrope* PIC format, which apparently picks up all IFF formats) . I have read in the past that companies used to download graphics from an Amiga to the ST. Is this the solution, if so, what is downloading?

Thanks for your help in advance.

Chris Evans, London SW18.

Pat MacDonald, technical editor of sister magazine *Amiga Format,* says: "Almost certainly, guv. The simplest way would be to use *Cross-DOS* to read the ST disk in the Amiga drive and import the files into your Amiga art package." He added that a phone call to one of the whizzier PD libraries that specialises in graphics would get you some pointers on the easiest way to do it. Pictures may need a little tweaking after the port from ST to Amiga.

If you haven't got *Cross-DOS*, you could do the swap using a null modem cable and comms software. The cable's simple to make and the comms software is only a couple of quid from a PD library.

■HELP! ST-CP/Mulator

Re: CP/M Emulator Atari STFM (520, single sided, no upgrades).

Q: CP/M requires (apparently – courtesy of Hisoft) two drives to format a CP/M disk:

- **Drive A: Contains CP/M disk.**
- **Drive B: Contains disk to be formatted.**

1. CP/M does not recognise a RAM disk.

2. CP/M will not allow you to swap disks as GEM does.

Do you know of any way around this?

The problem is the Atari reads CP/M disk as it is formatting B disk. I need this info because I want to buy Nevada Cobol from Hisoft and when I spoke to them they told me that: "Other people have managed to get round this but we don't know how, as CP/M is PD."

Please help.

I Keilans, Wirral.

Eeek, this sounds a little weird to me. All versions of CP/M that I have experienced have used transient programs which load into memory when needed and do their job from there.

I haven't any experience of the version that you describe. Trying to skin the cat with a different knife *(and upset the animal rights people to boot – Ed)*, why not assign a RAM disk just large enough to hold the formatting program and use it from there.

I don't pretend to know the nuts and bolts of this operation but it is perfectly possible on the 8- bit Amstrad CPC so there's no reason why it shouldn't work on a machine with four times the memory as standard.

Alternatively, you could work out the disk parameters for the CP/M disks and put one of those disk cracking programs to its only legitimate use by cloning an existing CP/M disk.

There may, however, be a Tech-Tipper out there with an alternative method.

■HELP! C64 gluepot

How can I arrange a serial port-over between an Amiga and a Commodore 64? Both machines have RS232 connectors, but the problem seems to be in converting the 0v/5v signal levels of the C64 to the more standard 12v/12v levels of the Amiga.

Jim Blackler, Lancaster.

Keep your eyes firmly rivetted to this spot. We're planning a C64 interface surgery, in which we'll be telling you how to weld all those peripherals to your non-standard C64 ports. If anyone's found an elegant solution to glue a peripheral on to the C64's parts, let's be hearing it. And fast.

■HELP! ST add-ons

I have a two year-old Atari 520 STFM with two drives, one single and one (external) double. I am planning to upgrade most of the system and I would like some help on it. I would be very grateful if you could answer some questions for me:

1. Is it possible for an IBM hard disk drive to be connected to an ST, and if so, how?

2. Can a Tandon Datapac be attached to my ST?

3. I want a good RAM upgrade system that is easy to fit and easy to upgrade to more memory. Which do you recommend?

Jason Chau, London N4.

1. Yes but you'd need an interface and it would end up costing you grief, or an arm and a leg.
2. No.
3. I recommend that you talk to the acknowledged expert on the subject of memory: Christine Barrow from the Chip Shop is the person in question and can be reached on 061-483 1989

■HELP! Lindsay's column

With regard to the questions you answered on CP/M for me (*Express* 92), could you explain how you convert the 80-column CP/M to the Spectrum CP/M, or is it possible to get a program from the public domain to do it?

I Lindsay, Blackburn, West Lothian.

It rather depends on the program. Many CP/M programs are able to be configured to run on different displays. For example, the Amstrad CPC has an 80-column screen, the PCW a 90-column screen and the Spectrum, not very many at all. A program such as *ROS* (Remote Operating System host program) can be configured to run at any column width.

The reconfiguration would vary from program to program with some being a simple decision on an installation menu, and others being a full fettled tweak. There are even some, *Protext CP/M* for one, that would require major surgery. Try one of the CP/M user groups (see page 50 for the Express On-line list) for advice on which ones can and cannot be simply sorted. ■

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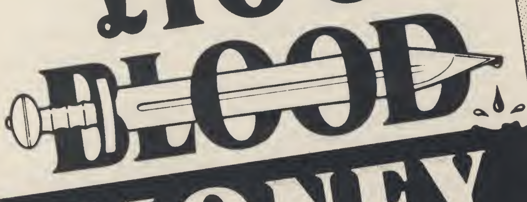

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STEVE JACKSON'S

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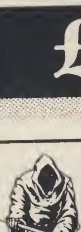

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Calls are more expensive than ordinary telephone calls and should only be made with the permission of the telephone subscriber.
Calls cost 33p per min cheap, 44p per min other times (inc. VAT). Touch-Tone phones recommended. Computerdial Ltd., Guildford, Surrey GU1 4JU.

MUSIC ON A BUDGET

Remember the days when buying a MIDI sequencer for the Amiga was a bit like going for a shopping trip in a Soviet supermarket – there was very little to choose from, and what was available was either too expensive or not worth bothering with in the first place.

Of course, the Amiga has still got its fair share of turkeys, but thankfully the days of 'liking it or lumping it' are long gone. These days, the problem is not so much where to find a decent sequencer, but which to choose. After all, unless you've managed to pin-point exactly what you require from your ideal program, they all seem to offer basically the same features.

Here's a look at the current best three budget offerings for the Amiga. I've tried to split them up to cover all the important points (see Points of Interest on page 66), but it's up to you to decide for yourself which is best for your particular purposes.

TRAX: SMOOTH IN OPERATION, STRONG SONG EDITOR

TRAX
£85 • MCM on 071-724 4104

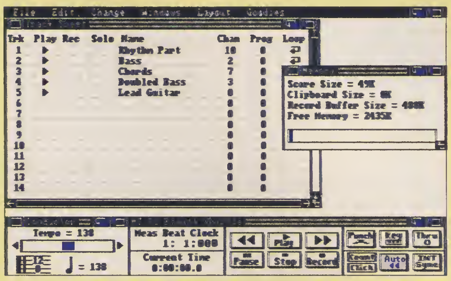
Passport has been in the business for a few years now, but it's been strangely quiet on the Amiga front. Until quite recently, about the only thing it had to offer Amiga musicians was *Master Tracks Pro*, a professional sequencer with a price to match. Now it's done us all proud with a sequencer that includes many of the good points of *Master Tracks Pro*, but with a price tag to encourage cash from even the deepest of pockets.

Trax is basically a cut down version of Passport's *Master Tracks Pro* system. Just like its forerunner, *Trax* uses the same Macintosh-like user interface which makes it a pleasure to work with.

RECORDING

Well, you're certainly not starved for tracks – *Trax* boasts 64 in total, all of which can contain a full 16-channels' worth of performance data. Recording is simplicity itself – just select which track you wish to record on, click on 'Record' and start playing.

All the usual record controls are there. You can punch in and out to correct playing errors within your recorded sequence, synchronise recording to an external MIDI device and make *Trax* wait until a key is pressed on your keyboard before either playing or recording. You can even automatically quantise (correct the timing of) notes as they are being recorded.



Trk	Play	Rec	Solo	Name	Chan	Prog	Loop
1	▶			Rhythm Part	10	0	↵
2	▶			Bass	2	0	↵
3	▶			Chords	7	0	
4	▶			Doubled Bass	3	0	
5	▶			Lead Guitar	0	0	
6					0	0	
7					0	0	
8					0	0	
9					0	0	
10					0	0	
11					0	0	
12					0	0	
13					0	0	
14					0	0	

Score Size = 49K
Clipboard Size = 0K
Record Buffer Size = 400K
Free Memory = 2435K

Tempo = 138
♩ = 138
Meas Beat Clock
1: 1:000
Current Time
0:00:00.0

• *The track editor allows MIDI channels to be assigned.*

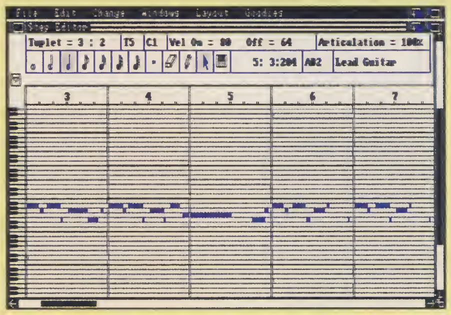
TRACK CONTROL

Once you've recorded a sequence, you can set both the channel which the track is to be played on, and the synth program number it is to be played with. You can also loop tracks, which can be handy for playing along to rhythm parts.

Any track can be moved about simply by selecting it with the mouse and then dragging it to its news position in the Track Sheet. All the rest of the track operations – delete track, copy track etc – are all pretty standard and are selected from the pull down menus. Surprisingly, if you wish to extract particular MIDI events, this has to be carried out from within *Trax*'s sequence editor.

EDITING

The *Trax* Bar Editor (or 'Step Editor' as Passport prefers) is one of the easiest, yet most powerful editors of its type that I've had the pleasure of using. Although it lacks many of the thrills of *Music-X Junior*'s bar editor, it's clear and intuitive design makes editing sequences a breeze.



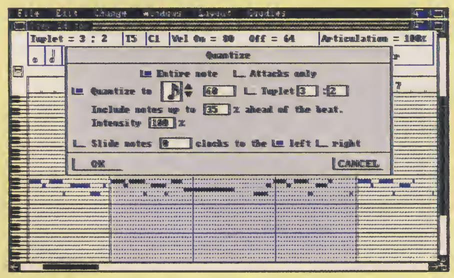
Tuplet = 3 : 2 | T5 | C1 | Vel On = 80 Off = 64 | Articulation = 100%
5: 3:204 A#2 Lead Guitar

• *The step editor offers direct control of note duration.*

The editor has several modes of working – draw (add notes with the mouse), select (highlights a block of data), erase (click on notes and they disappear) and keyboard mode, which allows you to add notes in step time using your MIDI keyboard.

Although *Trax* doesn't feature a conventional text-based stream editor, individual events can be fine tuned simply by double clicking on the note in question. This brings up a window containing information about the event, which can then be edited in much the same was as you would with a stream editor. Very nice.

Quantisation is particularly well handled – you can alter the intensity of quantisation and even shift notes slightly away from the quantisation grid, therefore allowing you to play a sequence slightly ahead or behind the beat.



Tuplet = 3 : 2 | T5 | C1 | Vel On = 80 Off = 64 | Articulation = 100%

☒ Entire note ☐ Attacks only
☒ Quantize to ♪ 60 ☐ Tuplet 3 : 2
Include notes up to 35 % ahead of the beat.
Intensity 100 %
☐ Slide notes 0 clocks to the ☒ left ☐ right

• *Quantising tools allow notes to be played accurately in time.*

Finally, the durations for selected notes can be scaled by a particular amount or set to a fixed length using *Trax*'s 'Change Velocity' option.

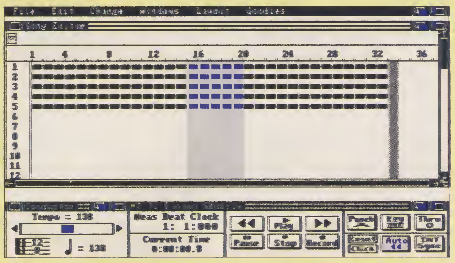
SONG CREATION

Trax is the only sequencer featured that actually includes a dedicated song editor. The editor works on the principle of building up a song by manipulating the available tracks in terms of measures. Each track is displayed as a number of blocks, where each block represents a single measure. For example, a sequence lasting three measures would be displayed as three filled blocks. These blocks can be moved about and new sequences created simply by cutting and pasting down blocks from other sequences.

MIDI MANIPULATION

All the standard tools are there – from the main Tape Transport window, you can re-channelise incoming MIDI data to any one of the 16 available channels.

Individual MIDI events can be filtered out with Trax's Record Filter facility. This allows you to set up *Trax* to selectively record only the MIDI events you require. However, this is restricted to just controllers – it would have been nice if you could have filtered out individual MIDI channels.



Tempo = 138
♩ = 138
Meas Beat Clock
1: 1:000
Current Time
0:00:00.0

• *The song editor lets you build up compositions.*

SOUND CHIP SUPPORT

Forget it. For some reason known only to the chaps at Passport, they've included no support what so ever for the Amiga's sound capabilities. This is a real shame, as *Trax* is so well hung in all the other departments.

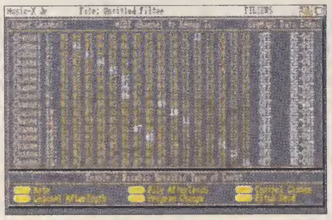
CONCLUSION

I must admit, I actually prefer *Trax* to it's big brother, *Master Tracks Pro*. *Trax* is much smoother in operation, and Passport has ironed out many of the bugs that existed in their more expensive professional offering. If you can live without the sound chip support, then *Trax* is definitely worth considering.

MUSIC-X JUNIOR: ACTUALLY ENCOURAGES CREATIVITY

MUSIC-X JUNIOR
£80 • The Software Business on 0480 496497

Since its release late last year, Microlllusions' *Music-X* has done more to promote the Amiga as a serious contender within the music market than any other program. Indeed, many credit Microlllusions' product as one of major factors behind the success the Amiga is currently enjoying as a musician's tool.



• Music-X *offers comprehensive filtering.*

Although competitively priced for what it offered, *Music-X* was rather expensive, putting it firmly out of the reach of most home users.

Microlllusions' answer is *Music-X Junior,* a cut down version of its successful sequencer system that boasts the same ultra-friendly user interface with many of the sequencing tools that made *Music-X* such a winner. After six months of delays, the program is finally available.

RECORDING

Just like its big brother, *Music-X Junior* offers the same 250 tracks of real time MIDI recording. Although not all can be displayed on screen simultaneously, a gadget allows you to scroll through the entire list of available tracks.

Junior can record a full 16 channels worth of MIDI data simultaneously. These channels can then be split and placed into their own tracks using the 'Extract Sequence' option. Up to four different cue points can also be set, therefore allowing you to easily jump to any part of a performance at any time.

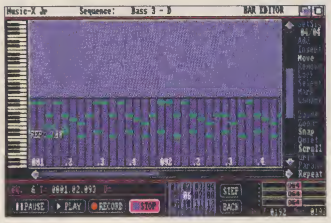
TRACK CONTROL

Just like all good professional sequencers, *Music-X Junior* is particularly strong in the track control department. Tracks can be muted and switched between external and internal instruments. You can copy a track from one to another, extract any number of different MIDI events and merge two tracks together. All are accessed from nice friendly pull down menus.

EDITING

Select the sequence you wish to alter, click on the Edit gadget and you'll be in the *Music-X* Bar Editor. Just like all bar editors, notes are represented as lines of different lengths. Note velocity is shown as a series of vertical bars along the bottom of the grid display.

Individual notes can be clicked on and then moved around, while larger sections can be highlighted and then manipulated en mass. You can also add notes simply by clicking the mouse button and then dragging the note to its destination, or by recording the notes from a MIDI keyboard straight into the bar display.

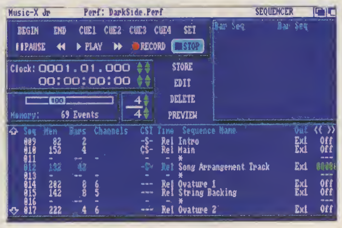


• *The bar editor is simple to use.*

Quantisation is fairly comprehensive, allowing timing errors in note start, stop and duration to be corrected. It would have been nice if you could have set up the quantise amount (the grid size) from the quantising requester – as it is, you have leave the requester and enter a separate requester each time you wish to change it. Also, note velocity and aftertouch can both be scaled by a user specified amount.

SONG CREATION

Song creation is unfortunately a weak area for both *Music-X Junior* and its big brother. Both use the Bar editor to construct songs by stringing together several tracks using *Music-X*'s own 'Play Sequence' events. These events tell *Music-X* when to play particular sequences (a bit like a list of cue points, really).



```
Seq  Mem  Bars Channels  CSI Time Sequence Name            Out  << >>
009   82    2            -S-  Rel Intro                    Exl  Off
010  152    4            CS-  Rel Main                     Exl  Off
011    -   --    -        -    -  *                             ---
012  132   42            -S-  Rel Song Arrangement Track   Exl
013    -   --    -        -    -  *                             ---
014  282    8    6       ---  Rel Ovature 1                Exl  Off
015  142    8    5       ---  Rel String Backing           Exl  Off
016    -   --    -        -    -  *                             ---
017  222    4    6       ---  Rel Ovature 2                Exl  Off
```

• *Song creation is* Music-X's *weak spot.*

However, when you lay down a Play Sequence event, *Music-X* does not set up the event to play the entire sequence – you have to do this yourself by stretching the duration of the Play Sequence event to the full length of the sequence that it triggers.

Unfortunately, this can only be done using the Event Editor to be found within the professional version of *Music-X.* Because Microlllusions removed this editor from *Music-X Junior,* it is now quite impossible to create a song using this system. I'm quite sure Microlllusions isn't actually aware of this, so it'll no doubt make the necessary changes as soon as someone points it out (Are you listening, Microlllusions?).

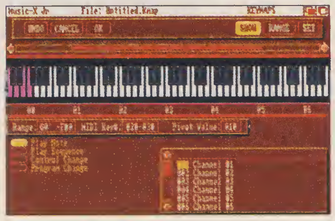
MIDI MANIPULATION

Built into *Music-X Junior* is the software equivalent of a MIDI patchbay. It can channel MIDI data from one channel to another, disable different types of MIDI controller (including pitch bend and aftertouch) and even turn channels off altogether.

Branching off from *Junior*'s filters page is a unique Keymap editor that allows you assign specific actions to keys on your MIDI keyboard. if you switch local control off on your synth, it is possible to set up several splits that will play on different channels (and hence different instruments) across the keyboard. You can set up your keyboard to start and stop the sequencer, and even play entire sequences simply by hitting a key.

SOUND CHIP SUPPORT

Music-X Junior offers a special 'Amiga Samples' page that allows you load a maximum of 16 different samples directly. These samples can be in either IFF or *Sonix* format, and can even be of different sample playback rates. This can be particularly useful for drum samples – it's perfectly possible to get away with a low sample rate on a bass drum, but you'll want a much higher sample rate to capture the high end frequencies of a cymbal.



• *Set up the keys to start the sequences.*

CONCLUSION

I do hope Microlllusions makes the effort to correct the problem with the 'Play Sequence' event, which will make the process of building up a song considerably easier.

However, niggles aside, *Music-X Junior* is a damned good program – it is one of the few sequencers that actually encourages creativity, while still delivering the raw power that you need to do the job.

WHAT SHOULD YOU LOOK FOR IN BUYING A SEQUENCER

There are several things that you should consider when purchasing a sequencer. If you check for these while making your buying decision, you won't go far wrong.

RECORDING – Make sure that the sequencer that you choose supports both step time and real time recording from MIDI. Step time can be particularly useful when building up rhythm parts, where as real time is used for recording sequences 'live'. It's also useful to be able to record several MIDI channels simultaneously, so that you can import performances from other sequencers much easier.

TRACK CONTROL – Most sequencers offer at least 12 tracks of recording, but you really need at least 24. Generally, the more tracks you have available to you, the more room you've got for experimenting with different bass lines and so on.

Also, check to make sure you can merge tracks, copy and move them about and extract different types of MIDI event from one track and store them in another. You may not find it useful to start with, but you'll thank yourself for being so wise once you get down to some serious sequencing.

EDITING – No one can play perfect first time, so choose a sequencer that allows you to edit sequences both in a graphical form (either as a piano role bar display, or in a more conventional score format) and as numeric MIDI data. Editing MIDI data in numeric format allows for greater precision.

SONG CREATION – You could just record your song straight in, but it's much easier if your sequencer includes tools to allow songs to be built up from sequences arranged as patterns. Preferably, go for a song creation system that is graphics-based.

MIDI MANIPULATION – It's always nice to have some kind of control over the MIDI data flowing through your set-up. Make sure that you can specify which channel a particular sequence is to be played on, filter out different types of MIDI event (for example, filtering out aftertouch messages can save a lot of memory) and channelise incoming MIDI data (send the incoming data for one channel straight out to another).

SOUND CHIP SUPPORT – If you're a bit on the skint side, then support for the Amiga's internal sound chip is a must. After all, why use your Amiga just as a sequencer when it's also capable of producing some pretty decent sounds all by itself?

THE ATARI ABC

Now, there's a PC-AT compatible that not only solves problems like other AT compatibles, it also solves the one problem that its predecessors have created … affordability.

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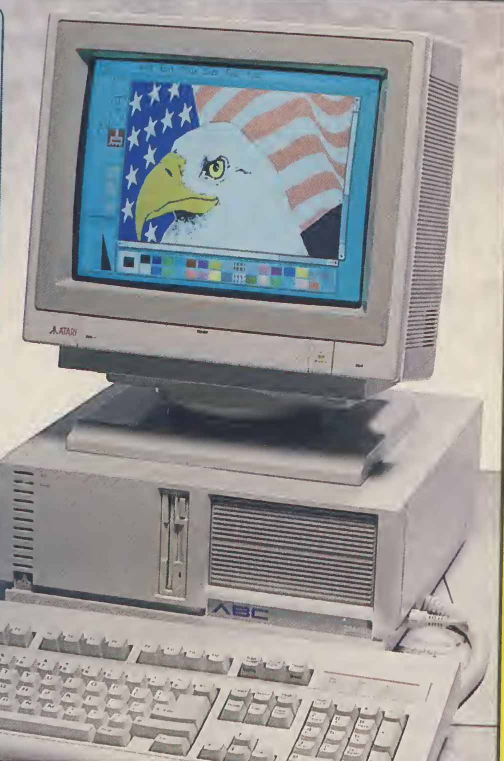

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TIGER CUB: QUIRKS WHICH MAKE IT SUCH FUN

TIGER CUB
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Dr.T has been producing music software for longer than most of us would care to mention. Even in the early days, when Commodore didn't seriously view the Amiga as a contender within the music market, Dr.T was out there producing music software for a market that it didn't know for sure existed.

Tiger Cub was originally developed as an add-on graphic editing environment for *KCS* (which was released under the name of *Tiger* on the ST), but mutated instead into a fully fledged sequencer for the Amiga. However, for a program that Dr.T claims is for the average home user, it needs at least a megabyte to run. Even then, you'll need more RAM if you wish to use all its features.

RECORDING

Tiger Cub is a 12-track sequencer. Recording a sequence is pretty straightforward – if the 'record' button is set, hit a key on your keyboard and *Tiger Cub* starts recording automatically.

However, one of the most annoying features of Dr.T sequencers is that the length of the first track is taken as the maximum length of any following tracks. For example, if the first sequence you record is something like 15 measures in length, then all subsequent tracks cannot be greater than 15 measures. This really stinks, Dr.T!

Also, although *Tiger Cub* can record data from several MIDI channels simultaneously, it only tells you which channel the first note was played on. This isn't too much of a problem, but it does seem to be a rather silly limitation.

TRACK CONTROL

All pretty standard stuff, but with the usual quirks that makes using Dr.T sequencers such fun. You can keep a 'backup copy' of any one track, so that if you mess things up editing the track, it can be restored to its original state. Also, you can copy tracks, swap tracks (handy this one) and merge several into one (although you cannot split them afterwards).

You can also both mute and solo tracks, and even group them so that only a user specified selection of tracks are played.

EDITING

Dr.T sequencers may be powerful, but they've got bit of a reputation for being rather unfriendly – after all, even their latest professional sequencer system, *KCS* 3.0, still uses a text-based stream editor for sequence editing. But thankfully, *Tiger Cub* utilises a standard bar editor much like those to be found within both *Music-X Junior* and *Trax*.

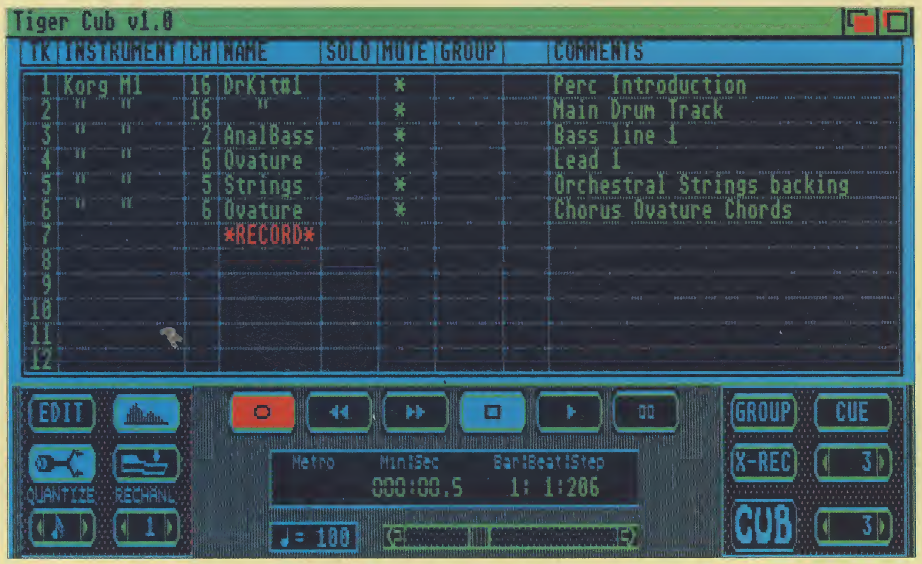
The *Tiger Cub* editor is pretty much the same as all the rest, but it is perhaps somewhat less user friendly. One feature I do like is that when you draw a note with the mouse, you can stretch it out to the desired duration simply by holding down the mouse button while moving the mouse across the desktop.

MIDI controllers can be drawn with the mouse using the *Tiger Cub* Controller window.

Of all the sequencers featured, *Tiger Cub* is the only one to offer true score transcription. The Score facility (which Dr.T calls *QuickScore*) is actually a separate program from *Tiger Cub*. However, using Dr.T's unique multi-program environment, music data is automatically passed between *Tiger Cub* and *QuickScore*, therefore allowing your music to be printed out in standard music notation. Ten out of ten for that one, Dr.T.

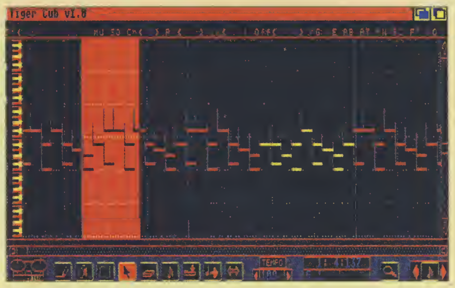
SONG CREATION

If you're expecting pretty graphics such as those offered by both *Trax* and *Music-X Junior*, then forget it. Previous Dr.T sequencers relied upon a text-based song editor that consisted mainly of a list of cue points. But, for some unknown reason, even this has been chopped. *Tiger Cub* definitely gets the thumbs down here.



TK	INSTRUMENT	CH	NAME	SOLO	MUTE	GROUP	COMMENTS
1	Korg M1	16	DrKit#1		*		Perc Introduction
2	" "	16	"		*		Main Drum Track
3	" "	2	AnalBass		*		Bass line 1
4	" "	6	Ovature		*		Lead 1
5	" "	5	Strings		*		Orchestral Strings backing
6	" "	6	Ovature		*		Chorus Ovature Chords
7			*RECORD*				
8							
9							
10							
11							
12							

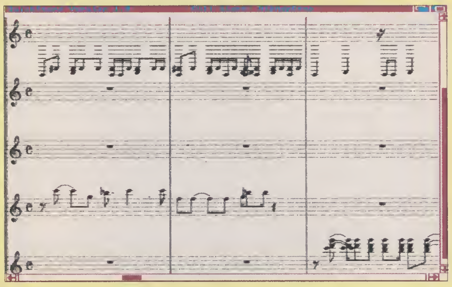
• *The track editor allows tracks to be assigned swapped, copied and backed-up.*



• *The bar editor is not as user friendly as the rest.*

MIDI MANIPULATION

Tiger Cub features pretty much the same MIDI manipulation tools as Passport's product, but they are somewhat less well implemented. They include MIDI merging (which basically acts as a 'thru' facility), aftertouch and continuous controller filtering, and MIDI rechanelling (very much like the MIDI merge option, but you can actually specify which channel the thru data is to be sent to).



• *Tiger Cub's score transcription is excellent.*

SOUND CHIP SUPPORT

This is one area where *Tiger Cub* really shines. Just like *Music-X*, up to 16 IFF samples can be loaded in and used. However, *Tiger Cub* treats them just like any other instrument – samples can be assigned to any one of the 16 available MIDI channels.

Therefore (unlike *Music-X Junior*), you can assign several samples to a single channel and then map them across the entire keyboard range simply by defining the top and bottom note for each letting you play a number of samples from the keyboard. You can also set the sample's volume and transpose it.

CONCLUSION

Tiger Cub is definitely a vast improvement on Dr.T's previous offerings, but it still falls along way behind the rest of the competition.

That's not to say *Tiger Cub* isn't any good – it's just that the other two programs are miles better than everything else on the market.

AND THE WINNER IS...

All three are excellent programs that could easily handle even the most demanding of musical applications. If these three are an indication of the quality of budget offerings, then just imagine how absolutely wonderful their 'professional' counterparts must be!

So which one is best for you? In the end, it's up to your to decide, but I know which I would choose. Cue drum roll... and the award for best Amiga budget sequencer goes to... cue sound of envelope being torn open... *Music-X Junior*!

However, Microlllusions' product certainly isn't a winner by a vast margin. If Passport's *Trax* had provided support for Amiga samples (which is such a glaringly obvious omission from a program that is aimed at the home market), then the choice wouldn't have been so clear cut. If you're not too worried about being able to play internal sounds, then you may wish to still give it serious consideration.

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FILLING THE GEN

AMSTRAD
POWER
3386
SX
The hard disk will not operate until DOS has been installed. Please install DOS following the installation instructions in the User Guide.

• The 3386SX features a 20MHz processor – 4MHz faster than most other SXs – for an extra turn of speed.

ERATION

Generation 3, the 3000 series, is Amstrad's third sortie into the serious PC market. First came the 1512/1640 series, then the big plastic 2000s with their hard disk hassles and now the 3000 series with its conservative styling and business specification.

The new machines are badged in the series 3086, 3286 and 3386SX with the numbers refering to the central processor. Different configurations of drive and display mean that their are 18 different variations around the 3000 theme with prices starting at a reasonable £631.35 for the basic 8086-based 3086 with mono display. Top of the range is the VGA 386SX based 3386SX with a 40Mb hard drive for £1,838.85.

Amstrad has always been quick to bend in the fiscal breeze and after trying a couple of its design ideas out has dropped back to the standard angular PC box in corporate cream. The new boxes will take up less desk space and the metal construction should stand up to office life in a way that will be greatly welcomed by those holding company purse strings.

More of a whimper than a bang is a fair description of the machine's visual impact. Amstrad has played safe with a machine that could be any of 100 generic PCs; a small(ish) footprint, an angular metal box, an AT keyboard and a VGA monitor. The 3000s aren't radical in design and would look at home in an office full of IBMs, Compaqs or any of the standard PCs or clones.

Inside the box there's a plethora of surface-mounted components. This shift from the more conventional leg-mounted ICs is an indicator of Amstrad's commitment to the new bonded method.

SURFACE MOUNT

Surface mounting means that the component is directly bonded to the printed circuit board using a purpose-prepared bonding agent, then the conductive solder is poured directly on to the component and makes the circuit connections by direct precipitation. As well as being a simpler method of construction, surface mounting is less liable to failure caused by faulty connections and 'dry' joints.

The top of the range 3386SX machines came as a surprise, not having the 386DX chip as prime mover. Malcolm Miller, Amstrad's sales and marketing manager said: "We believe that 386SX PCs are emerging as standard equipment for the professional user. Demand for the 386DX machines is more specialised and is covered by our existing PC2386. There are no plans to impliment the 386DX in the Generation 3 range".

The speedy 386SX, with its 20MHz clock speed and 16-bit wide data bus, should certainly fill the needs of most users and there's no doubt that the professional user who wants a solid traditional machine may now be moved toward the new Amstrad range.

It's a different story at the other end of the range though. £631.35 for the cheapest machine, albeit with VGA mono display, is not the cheapest PC around. The low-end PC market is currently clogged with clones and the new 3086s will have to take their chances with over 30 similar PCs in the same price bracket. Indeed Amstrad itself produces two of the direct competitors with the 1640 and the 2086. Cheap PC champion Bondwell can even offer a fully portable clamshell laptop in the same price region as the 3086.

The mid-priced 286-based machines, starting at £861.35 for the single drive mono version and going up to the £1378.85 for the colour VGA AT clone with a 40 Mb hard drive, is the range that will probably attract most buyers. Not everyone needs the added performance and virtual modes of a 386 and most commercial tasks can be done by the 3286 and its derivatives. The dual speed (16/8MHz) will be fast enough for most applications, the software compatibility and solid business-like lines will mean that it fits in to any office environment and the competitive pricing will keep the company finance director happy.

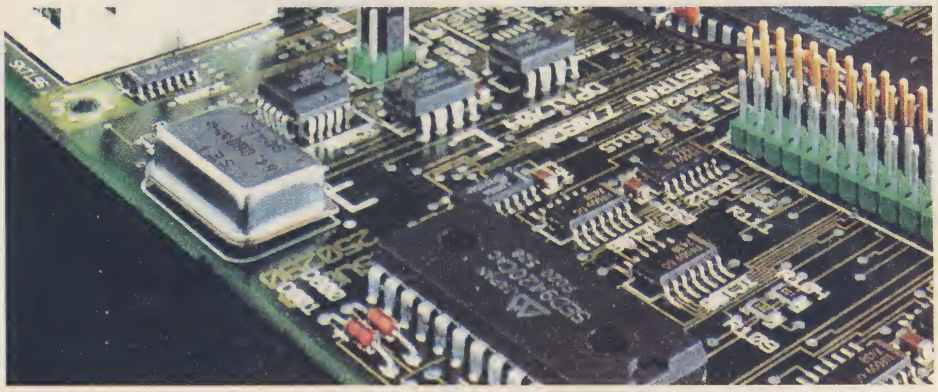
The 3000 series for the European market will be made in Scotland and those destined for the UK will be distributed by the new Amstrad Service Centre network of 100 regional centres (*Must be small regions - Ed*).

To entice the corporate purchaser who has a need for the machine to be on-line and available all the time, Amstrad has done a deal with GEC's service division, to supply next day on-site warranty maintainance and support.

CONCLUSION

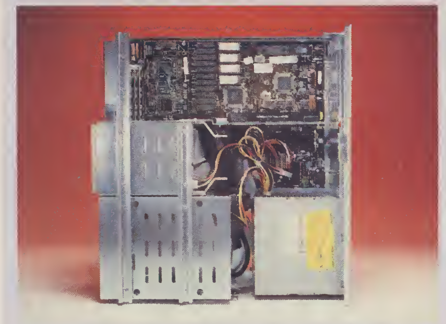
There's not a lot that can be said for or against the new range. Unlike previous Amstrads there are no 'spacy' lines, plastic boxes, interesting software, built-in modems or incompatible standards. Generation 3 is a relatively non-descript and unexciting range of machines that are exactly what the market demands. They are cost-effective workhorses relying on well documented existing technology but utilising current trends in surface mounting.

Like most things Amstrad, they will sell. ■



• *Inside the new Amstrads, extensive use has been made of suface mounted components, which are more reliable.*

SPECIFICATIONS



● PC3086

Processor	8086
Clock speed	8MHz
Main memory	640K
Memory width	16-bit
Co-processor socket	8087
Real time clock	10 yr battery backed NVR
Drive	3.5-inch 720K or 5.25-inch 360K
Hard drive option	30Mb (39ms)
Expansion	3x8-bit full length, 1x8-bit half length
Display	VGA
Keyboard	102-key AT style
Software	MS-DOS 3.3
Ports	Parallel, serial, mouse,VGA monitor and power.

● PC 3286

Processor	80286
Clock speed	18/8MHz
Main memory	1Mb
Expansion	2/4/8/16Mb
Memory width	16/32-bit
Co-processor socket	80287
Built in LIM	Yes
Real time clock	10 yr battery backed NVR
Drive	3.5-inch 1.44Mb or 5.25-inch 1.2Mb
Hard drive option	40 Mb (28ms)
Expansion	2x16-bit full length, 1x16-bit half length, 1x8-bit full length, 1x8-bit half length.
Display	VGA
Display	VGA
Keyboard	102-key AT style
Software	MS-DOS 3.3
Ports	Parallel, serial, mouse,VGA monitor and power.

● PC3386SX

Processor	80386SX
Clock Speed	20/10MHz
Main memory	1Mb
Expansion	4/16Mb
Memory width	32-bit
Co-processor socket	80387SX
Drive	3.5-inch 1.44Mb
Hard drive option	40Mb (28ms)
Expansion	2x16-bit full length, 1x16-bit half length, 1x8-bit full length, 1x8-bit half length.
Display	VGA
Display	VGA
Keyboard	102-key AT style
Software	MS-DOS 3.3
Ports	Parallel, serial, mouse,VGA monitor and power.

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THE JOY OF CEEFAX

Linking up your computer to the television signal could help you make your fortune. Stuart Anderton paged the Oracle...

If you fiddle with the vertical hold of your television so that the screen gently scrolls downwards, look closely at the very top line; it's flickering away in an apparently random way. That's the teletext information, encoded in the video signal in much the same way as a modem encodes the computer's signal as sound.

Depending on what channel you are tuned to at the time the teletext information contains Ceefax (the BBC), Oracle (ITV) or 4Tel (Channel 4).

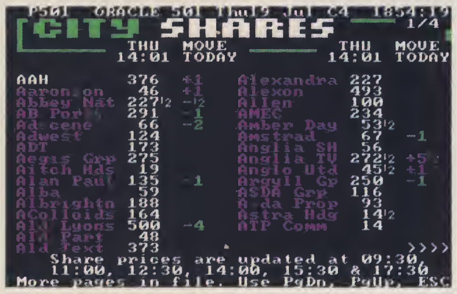
The first teletext systems were based on the BBC micro and the information is still displayed in screens which use the Beeb's Mode 7 format – extremely blocky graphics, a choice of eight colours (16 if you count the flashing options) and chunky text designed to be read on a colour TV screen rather than a monitor.

Many modern colour TVs come with a teletext receiver as standard, so the television companies have been putting increasingly large amounts of information on teletext. The most common use for the machines is as a subtitling system, but there is much more besides.

All the teletext channels provide a news service. Although in-depth analysis is limited by the small number of words you can fit on the page, the teletext services have the advantage over the other media that they can be constantly updated in real time as the news happens. Ceefax and Oracle both offer a newsflash service which shows you the most recently updated news item. The teletext news service is as near as you can get to having your very own personal 'wire' news terminal.

Teletext also excels at stock market information. During trading hours BBC2 and Channel 4 provide information on money rates, the FT30, FTSE 100, currencies, commodities and the state of the market, as well as city-related news. All this information is kept continuously up to date throughout the day. Channel 4 also includes the latest news from Wall Street. Both systems contain an A-Z index of all listed share prices allowing you to look up anything you like.

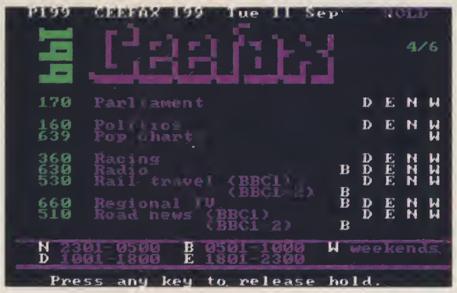
Another area where teletext is useful is sport. Teletext offers comprehensive horse racing information, both on results and odds for the races to come. Football results are fully recorded, as are the present state of the divisions.



```
P501  ORACLE 501 Thu19 Jul C4  1854:19
 CITY SHARES                        1/4
          THU   MOVE          THU   MOVE
         14:01 TODAY         14:01 TODAY

AAH         376   +1   Alexandra  227
Aaronson     46   +1   Alexon     493
Abbey Nat   227½  -½   Allen      100
AB Port     291   -1   AMEC       234
Adscene      66   -2   Amber Day   53½
Adwest      124        Amstrad     67  -1
ADT         173        Anglia SH   56
Aegis Grp   275        Anglia TV  272½ +5
Aitch Hds    19        Anglo Utd   45½ +1
Alan Paul   135   -1   Argyll Gp  250  -1
Alba         59        ASDA Grp   116
Albrightn   188        Asda Prop   93
AColloids   164        Astra Hdg   14½
Ald Lyons   500   -4   ATP Comm    14
Ald Part     48
Ald Text    373                      >>>>
   Share prices are updated at 09:30,
    11:00, 12:30, 14:00, 15:30 & 17:30
More pages in file. Use PgDn, PgUp, ESC
```

• *Share prices are available for your perousal. This is an IBM CGA screen, other machines represent teletext in its glorious eight colours.*



```
P199  CEEFAX 199  Tue 11 Sep         HOLD
 bbc Ceefax                          4/6

 170  Parliament                D E N W

 160  Politics                  D E N W
 639  Pop Chart                       W

 360  Racing                    D E N W
 630  Radio                   B D E N W
 530  Rail travel (BBC1)        D E N W
                  (BBC1-2)    B
 660  Regional TV             B D E N W
 510  Road news (BBC1)          D E N W
                (BBC1-2)      B
 N 2301-0500  B 0501-1000  W weekends
 D 1001-1800  E 1801-2300
   Press any key to release hold.
```

• *Some of the information available on Ceefax. Not all of it is available at once, as the codes show.*

SO WHAT?

So what's all this got to do with computers? You can buy a device which plugs in to your computer which allows you to pick up teletext information and display it on your monitor. These 'teletext adapters' are available for most home micros and cost around £150 or so.

Being able to see subtitles on you computer may not at first strike you as being very useful, but consider this: the adapter is under the control of your computer and the information it receives can be downloaded in the form of text, not just a graphic image.

Still not convinced? Then try the following for size.

You do the football pools regularly. To help you analyse those fourth division clashes between out-of-season seaside towns you write a simple BASIC program. The program can tell you the results of their last 10 matches, the number of away games they have won this season, their average score and the result the last time they met.

This information is pretty helpful when it comes to sussing out two teams you have barely heard of, but there is a problem. To get the program to work you need to type in ever single result from every single game. That could take you most of Saturday night, never mind the Sunday and mid-week games.

With a teletext adapter things couldn't be easier. Your program simply turns to the football results page on Ceefax and downloads them as a text file. A couple of decoding subroutines later and you have an updated data file which could just make you a millionaire.

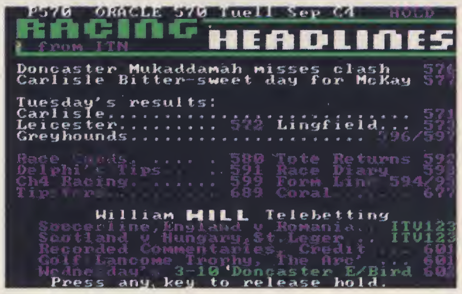
Alternatively, how about this. You have a substantial share investment but you don't want to pay a money grubbing financial type to look after it for you and take a share of the profit. But having direct control of the stocks makes you nervous; if the company share price crashes you could be a serious loser.

So you plug a teletext adapter card into your PC and set up a timer utility to activate it three times a day. A simple BASIC program turns to the financial part of Channel 4's City service, looks up your share prices and squeals at you if the prices get too low.

THE REAL THING

These are not hypothetical applications, they exist. *ProShare ST* and *MarketBreaker* both allow an Atari linked to a teletext adapter to control shares investments, and they also let you examine all the shares in the market for possible trends and good investment opportunities. A shareware program is under development for the ST which will do pools prediction based on teletext information. And Kuma's latest version of *K-Spread* lets you assign information from a teletext page to a cell in the spreadsheet and will automatically update the information. More spreadsheets with this ability are on the way.

But the best part about these teletext adapters is that they can be controlled by your own programs. Particularly simple to use is the new PC adapter, which comes with a device driver which allows programs to address the adapter as if it were a disk file and send commands and receive data with INPUT# and PRINT# statements (or whatever the equivalent is in whatever language you prefer).



```
P570  ORACLE 570 Tue11 Sep C4    HOLD
RACING  HEADLINES
 from ITN
Doncaster Mukaddamah misses clash   57
Carlisle Bitter-sweet day for McKay 57

Tuesday's results:
Carlisle..........................  57
Leicester........  572 Lingfield...  57
Greyhounds......................  596/59

Race Cards.......  580 Tote Returns 59
Delphi's Tips....  591 Race Diary   59
Ch4 Racing.......  599 Form Line 594/9
Tipsters.........  689 Coral ......  67

       William HILL Telebetting
   Soccerline,England v Romania.  ITV123
   Scotland v Hungary,St.Leger .. ITV123
   Recorded Commentaries, Credit ... 601
   Golf Lancome Trophy, The Arc' ... 601
   Wednesday's 3-10 Doncaster E/Bird 60
   Press any key to release hold.
```

• *Full sports results are on line, and they can be read by your computer.*

Next time you use a teletext TV, have a flick through the main index (Ceefax and Oracle page 199, 4Tel page 699). Apply a little lateral thinking to information there. You just might come up with a way to make your fortune... ■

AN ADAPTER FOR YOU

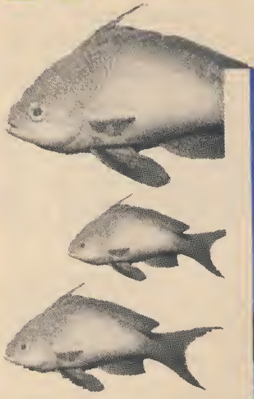
The Portsmouth firm Microtext (0705595694) makes teletext adapters for most makes of computers. Most are external devices which look a little like modems; they plug into the printer port of your machine and have a socket for an aerial. The PC adapter is the exception, which is is a plug in expansion card.

Adapters for the CPC and C64 cost £144, the Amiga and ST models cost £150 and the PC version is £195. Another firm, Morley, does an adapter for the BBC which costs £99 from Watford Electronics (0923 37774).

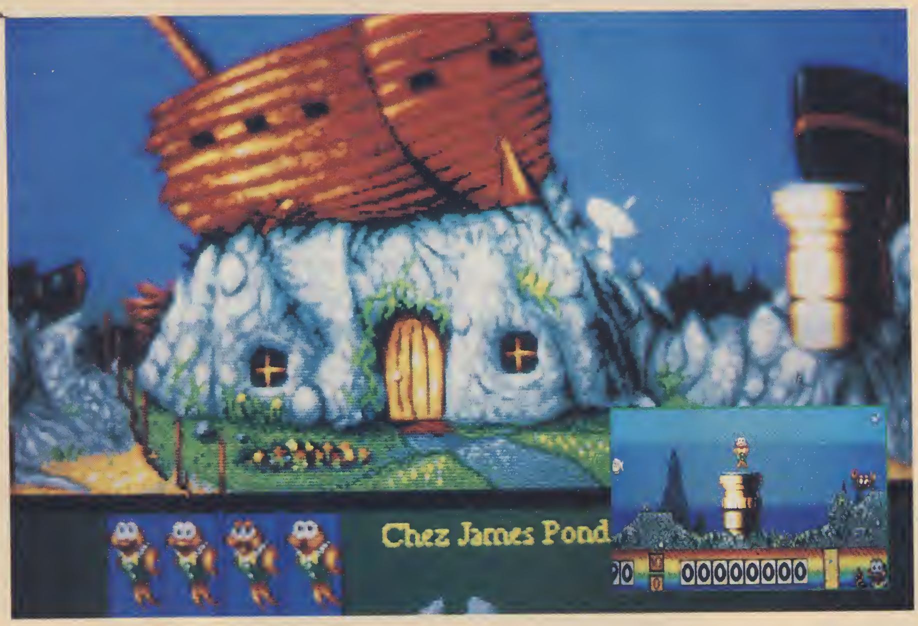
Don't forget you'll need a TV licence as well, and a colour one at that if you have a colour monitor!

WIN!

Millenium's James Pond



Yet again, here's another competition prize I'd prefer to hang on to. But oh no! "You're just a low-life, worm, base thing, and you're going to give away 10 copies of *James Pond* or I'll personally pull your big toenail up through your body." That's what Andy – I'm the editor OK pal – Storer told me. So, not wanting an internal pedicure, I, compo man, am giving away 10 copies of the game. The really galling thing is that the retailers haven't even got it yet which makes it a real scoop for the winners.



Oh, there are also 50 posters to be won by the lucky runners-up. The posters are of the James Bond genre with exploding oil rigs, loads of colour and the fish himself looking suave.

What fish? You ask. Why James Pond. He is the main character in the game. He has a mission, in fact he has 12 missions on 12 levels. Due to his closeness to nature, though why a fish is any closer to nature than the rest of us is quite beyond me (*Evolutionarily speaking that's how, now get on with it – Ed.*), all the missions are ecologically sound.

For example, he has to rescue lobsters from lobster pots, he rescues mermaids from scientists, fish from pools in which radioactive canisters are leaking, and he has to plug leaks in tankers. For part of the game he is allowed to go inland, moving from pond to pond. While land-based he must plant poison orchids around trees in order to stop them from being chopped down. I think you get the idea.

No one has yet seen the game, so this could be your chance to be the first person in your area to own a copy of the game. All you have to do is answer two questions which have been researched by a highly trained team of academic quarterhorses in the Bodlean library. The simplicity of these questions would cream the synapses of most super-computers who would search for hidden depths therein. There are no hidden depths, in fact you'd have problems finding any obvious depths. So here are the questions:

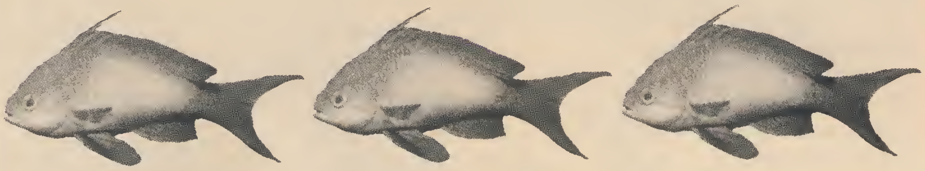
1) Who, of the following, never played James Bond on film?
   A) Timothy Dalton
   B) Nobby Stiles
   C) George Lazenby

2) Which of these would you not normally find in a pond?
   A) Timothy Dalton
   B) Pond weed
   C) A fish

Once you've wracked your brains for an answer, all you have to do is complete the form below and send it off to: That *James Pond* Competition You're Running in *Express* If I'm Not Mistaken, *New Computer Express*, 30 Monmouth Street, Bath, Avon BA1 2BW. Entries to be in by Monday October 1 1990.

Answers on the backs of envelopes or on exotic postcards which I can add to my growing collection. The editor's decision is final, I think.

The only conditions attached to the competition are that you buy this issue of *Express*. We know damn well if you haven't and do you want to know how? Well, this week I'm not telling you, just beware of small Caspian men wearing blancmange and hair-nets. They are highly trained ninjitsu experts and will pounce on anyone cheating. ■



THE WINNERS

The super-fabby Ad-Lib PC sound card competition attracted quite a substantial number of discerning readers. Unfortunately only one of them could win. The lucky winner is Darron Martin Broad of Stoke Newington. Nice one.

STOP PRESS

Due to popular demand, we have decided to extend the *Atomix* competition. Last entries are due in by Monday September 17 1990.
Er, that's it.

ATOMIX
THALION

Name ....

Address ....

....

....

Answers: 1) .... **2)** ....

I couldn't be bothered to send an exotic postcard because *(no more than ten words)*..

I have sent an exotic postcard because I'm generous/good company/ good natured/ prepared to do anything to win. (Delete as applicable)

My computer is: Amiga ☐ ST ☐

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